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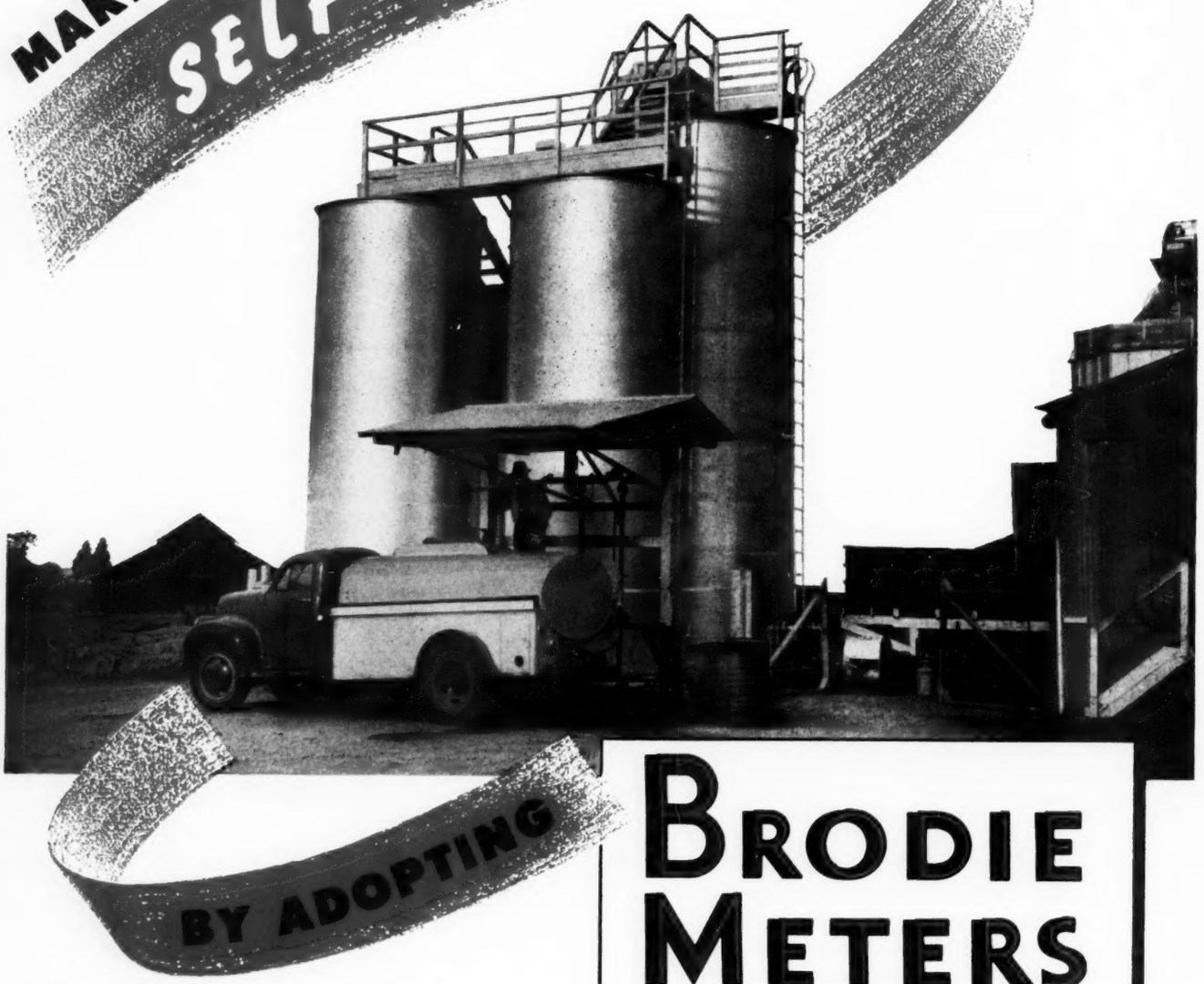
# fueloil & oil heat

At the Cleveland Show

# MAKE SMALL BULK PLANTS SELF-OPERATING...



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VOL. 5, NO. 10

fueloil & oil heat

FEBRUARY

1947

## Names in the News

*Julius K. Luthe,* long a prominent figure in the oilheating control business, has been elected chairman of the board of the Perfex Corp., Milwaukee, at the last meeting of the board. At the same meeting C. E. Lewis was elected a director and president to succeed Mr. Luthe, and Allen Butler, vice-president was named to take over the responsibilities formerly handled by Mr. Lewis in the Controls Division. Mr. Luthe, former president of Time-O-Stat Controls, founded the present Perfex company in 1934 and put it into the heating controls business in 1935.

*Charles A. Cooper* has been made Assistant General Manager of the Timken Silent Automatic Division of The Timken-Detroit Axle Company, it was revealed by T. A. Crawford, General Manager. Mr. Cooper first became associated with the oilburner industry in 1928 when he joined Silent Automatic. In April 1937, he was made Assistant Secretary and Assistant Treasurer of The Timken-Detroit Axle Company, and has served in this capacity until the present time.

*Leonard C. Ericks,* president of Ace Engineering Co., Chicago, died January 29, aged 53. He joined the Ace organization in 1932 as a salesman of industrial oilburners.

*Frederick C. Brandt* has been named sales manager of the air conditioning controls division for the Minneapolis-Honeywell Regulator Company in the southwestern region, as recently announced by

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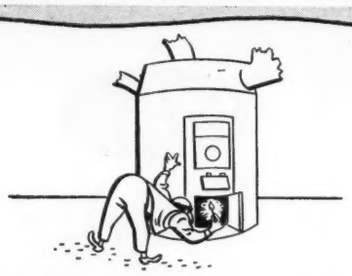
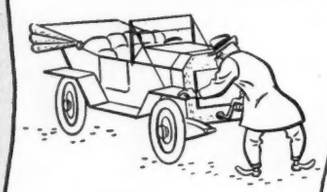


**A Vaporizing Oil Furnace Without Electric Ignition Is Like an Automobile Without a Self Starter**



**An Annoying Problem**

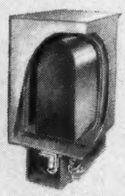
A vaporizing oil burner, furnace or circulating heater without electric ignition must be lighted by hand every time the user wants heat, or else a pilot light (low fire stage) must be maintained in the burner. Both alternatives are unsatisfactory. One is inconvenient, the other wastes fuel and is subject to failure.

This form of heating is like having an automobile that you must crank each time you want to use it, or else leave the motor running anywhere from a few minutes up to several hours, during periods of non-use.

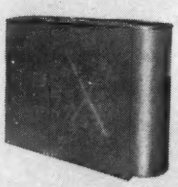
EXCLUSIVE, PATENTED

H.C.Little

ELECTRIC IGNITION MAKES THESE UNITS OUTSTANDING



Oil Burning Floor Furnace—The "Daddy" of Them All!



Basement Type Winter Air Conditioner

**The Perfect Solution**

In direct contrast is exclusive, patented H. C. Little ELECTRIC IGNITION, which is completely "self starting." When the thermostat calls for heat, the H. C. Little vaporizing burner operates at high efficiency—otherwise it is entirely shut off. There is no pilot light or "low fire" stage to waste fuel, cause soot or smoke, or fail entirely. ELECTRIC IGNITION is the BIG SALES FEATURE that ONLY H. C. Little has successfully applied in the low-cost vaporizing furnace-burner field.

**And What a Sales Story!**

This exclusive H. C. Little feature is one very important reason why so many H. C. Little dealers have reported such phenomenal sales results, over a period of many years.

Conversion Oil Burner—No Other Has Electric Ignition & No Moving Parts

H.C.Little BURNER CO.

SAN RAFAEL CALIFORNIA

Factory Representatives in Principal Cities

Utility Room (Or Closet) Winter Air Conditioner


John E. Haines, vice president. Brandt will make his headquarters in Houston at the company's regional office.

*J. E. Ledger* is General Manager of the J. L. Gillen Co., Dowagiac, Mich., manufacturers of automatic oil burning water heaters and furnaces, it was announced recently by Harold R. Coon, president. Mr. Ledger was formerly sales manager of the Universal Engineering Co., San Diego, Calif.

*Robert T. Debler* has joined William J. Debler & Sons, factory representatives for oilheating equipment, as manager of the Philadelphia office to cover the area from Southern New Jersey to South Carolina. He was an Ensign in Naval Aviation and recently has been a student at Boston College. The company's main office, formerly at Philadelphia, recently has been moved to Newark, N. J., with William J. Debler, Sr. in charge, and William J. Debler, Jr., in charge of the New England area at Boston.

*Jos. C. Hauf, Jr.,* formerly with Quiet May at Baltimore, has been named manager of the General Division for York-Shipley, Inc., York, Pa. The division, a companion to the domestic and industrial divisions, handles Canadian and export business.

*Ernest R. Farley,* for 34 years Pacific Coast fueloil manager for the Shell Oil Company at San Francisco, retired January 1. He started the fueloil sales department from scratch for Shell in 1916, after entering the oil industry as a toolhouse keeper in the Kern River field.

*Donn Sutton,* former editor-in-chief of NEA Service, Scripps-Howard's worldwide newspaper feature organization, has been appointed public relations counselor for the Borg-Warner Corporation, according to C. S. Davis, president. He has established a news bureau for Borg-Warner at Chicago.

# No matter how well you build

# Your Product

# . . . if its performance depends on temperature or pressure control . . . that product can be no better than the controls with which it is equipped

WHITE-RODGERS ELECTRIC CO.

ST. LOUIS 6, MISSOURI

*Controls for Refrigeration • Heating • Air Conditioning*

fuel oil & oil heat

# Editorial Leaks

Those who listened with a sharpened ear at the Cleveland heating show last month claim to have heard overtones of selling in many of the product discussions. There were stories of companies that had small stockpiles of product, and though none would admit any anxiety, there was a feeling around the hall that customers were welcome, rather than tolerated.

Prices have not yet softened appreciably, but many of the visitors were making notes of features and prices rather than placing orders and begging for shipment on any terms. There was an important volume of business transacted in the hall, and there was a great deal more business that was temporarily postponed until the dealers and contractors can sense the demand a little more accurately. Retailers report uneasiness and indecision in the public mind over major purchases, and they, in turn, are not rushing to stock high-price equipment for the uncertain market.

All this seems to indicate that the honeymoon is going to end before very long, and the folks are going to settle down at home and go to work. All the problems are not solved, nor has all the joy gone out of life, but there is about to be a better balance between ecstacy and drudgery and between buying and selling. Sanity and some honest work must take the place of our recent tour of joy if the oilheating industry is to build a sound future.

◈

While this industry is going through a fairly orderly transition to normalcy, some of our contemporaries are having serious trouble. Coal for domestic heating is in such bad odor with the public that retail dealers are on the verge of panic. Residential tonnage is dropping so fast in many areas that dealers are considering getting out of the business entirely. It is said that poor quality of coal delivered is adding to the problem. Canadian coal dealers, forced by the lack of Welsh coal to accept imports from this country, are openly critical of the quality, and fearful of the long-range effect on their market. Denmark, forced by lack of British coal to import from the United States, calls the product they are getting a "mixture of coal refuse with soil," and hint that they will long remember the treatment they got when they were helpless to protest too vigorously.

Gas companies which recently shook their heads to new residential heating load, now have said "positively." A wave of cold weather which hit the East in Mid-January made it necessary to shut off gas service to many homeowners to prevent a critical drop in pressure that would endanger life and property through pilot-light failure and admission of air to the lines.

While the heating show was in full swing at Cleveland the East Ohio Gas Company announced that no new heating load could be added until the "fall of 1947 or possibly through 1948." The company is waiting to see if any new supply will be made available by way of the "Inch" pipelines. New demand in the last year has put many gas companies in a similar position, and new lines or new sources of gas supply will be necessary before any more load can be added.

It is ironic, as pointed out here before, that the very facilities that make gas an ideal fuel are limiting its expansion. Gas comes ready to burn through a pipe, but the pipe cannot be expanded or otherwise increased appreciably in capacity, though some attempts are being made to step up the heat carrying capacity of lines carrying manufactured gas. Propane (bottled gas) is being used for enrichment in some areas, allowing the same pipe to transport more Btu per cubic foot of gas delivered, but existing gasburning equipment connected to the lines will not burn satisfactorily a too-rich gas.

Oil heat's pipeline is on wheels. It is not too difficult to add more wheels when necessary, or to roll the wheels more hours a day to satisfy an increasing demand. Gas never will have the flexibility or be able to offer the reliability of supply that is inherent in oil, regardless of the weather or the demand by the neighbors for heat.

These are advantages that every man in the oilheating business should keep firmly in mind and sell to the utmost.

Canadian oil men are having an embarrassing rush of business these days that caused a temporary shortage of heating oil. Expansion of oilheating apparently was far greater than anticipated, and new transport facilities were not provided with adequate speed. The result has been a stoppage of new installations in some places since the first of the year, though it is expected that the situation, in Eastern Canada at least, will be corrected by the middle of February.

Work is understood to be under way to convert the crude line from Portland, Maine, to Montreal to carry heating oil. The larger refiners have been reluctant to admit there is any shortage, and many of the smaller oil companies have not been told there is any danger of short supply. The shortage is more accute in the Prairie Provinces of the Central West where there is little local supply.

The situation is temporary and is now being corrected. Oilburner installations soon will be going in again, and a better supply system will be working.

◈

Customer satisfaction is becoming the major concern of oilheating men in many areas, and campaigns to inform the public on good oilheating are getting under way. A warning to the public by the Toronto Better Business Bureau was reported here last month. This warning has been repeated in other Canadian cities, and plans are well advanced for similar educational advertising to some areas of this country.

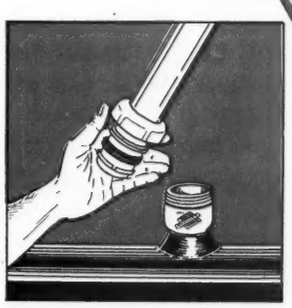
Concern over industry reputation is not confined to this business. The Refrigeration Equipment Manufacturers Association has just cautioned the public against "using the services of engineers, contractors or suppliers who are not thoroughly qualified to perform expert installation and service operations."

Poor workmanship, shoddy materials and outrageous prices can ruin more business than competitors can take away from us by their own means.

◈

Urging owners to winterize their homes, a U. S. Radiator official has pointed out that the average home has cracks and openings equivalent to the size of a kitchen sink, or 22 bricks. It is something to remember when selling the customer comfort and oilheating satisfaction.

# IT IS *Only* WHILE OIL IS FLOWING



The LC model VENTALARM is easily installed on old tanks. A slip-fit quick compression fitting with bayonette lock eliminates any pipe threading. Takes only 15 to 20 minutes.

It is only while oil is flowing *into* a fuel oil tank that your oil chauffeur is actually doing something for which a bill can be rendered.

He *could* go in and out of houses all day long. He could stick tanks to his heart's content. He could calculate the size of deliveries needed. He could make pleasant conversation with your accounts. He *could* be the best oil chauffeur in the world. But, until he actually pumped some oil into a tank, he would not have done a single thing that would make a nickel for you!

SO — let's keep your oil chauffeur actually dropping the product as much as possible. Let's keep him *out* of houses. Let's do away with all unessential moves. Let's fix things so he can go directly to the fill pipe, *safely* drop all the oil the tank will take and then be off to the *next* stop. That way lies profit!

**Are *your* customers' tanks equipped with VENTALARM fill signals?**

Purchase through your favorite supply house, or write us for complete details.

SCULLY

**VENTALARM**

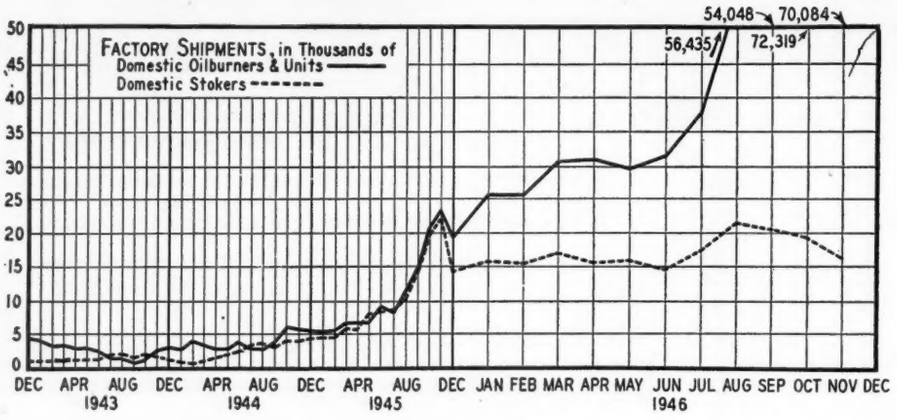
T.M. REG. U.S. PAT. OFF.

*Whistling* **TANK FILL SIGNAL**

SCULLY SIGNAL COMPANY
88 FIRST STREET · CAMBRIDGE 41, MASS.

VENTALARM is also made for automotive gasoline tanks. Ask for VENTALARM on your new car.

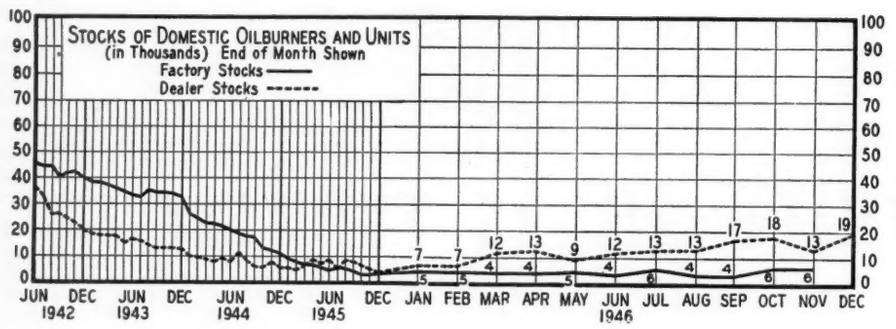
Manufactured in Canada by EMPIRE BRASS MFG. CO., LIMITED, London, Ontario




## Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 124 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

| | NOVEMBER | | | ELEVEN MONTHS | | |
|---|---|---|---|---|---|---|
| | *1946* | *1945* | *Percent Change* | *1946* | *1945* | *Percent Change* |
| Conversion | 57,996 | 20,604 | +181.5 | 409,979 | 101,633 | +303.4 |
| Boiler units | 3,816 | 938 | +306.8 | 22,966 | 7,091 | +223.8 |
| Furnace units | 8,272 | 1,784 | +364.2 | 32,105 | 13,222 | +142.8 |
| All domestic | 70,084 | 23,326 | +200.5 | 465,050 | 121,946 | +281.4 |
| Commercial | 3,979 | 1,796 | +121.5 | 35,849 | 31,143 | + 15.1 |
| Total | 74.063 | 25,122 | +194.8 | 500,899 | 153,089 | +227.2 |


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945
1946

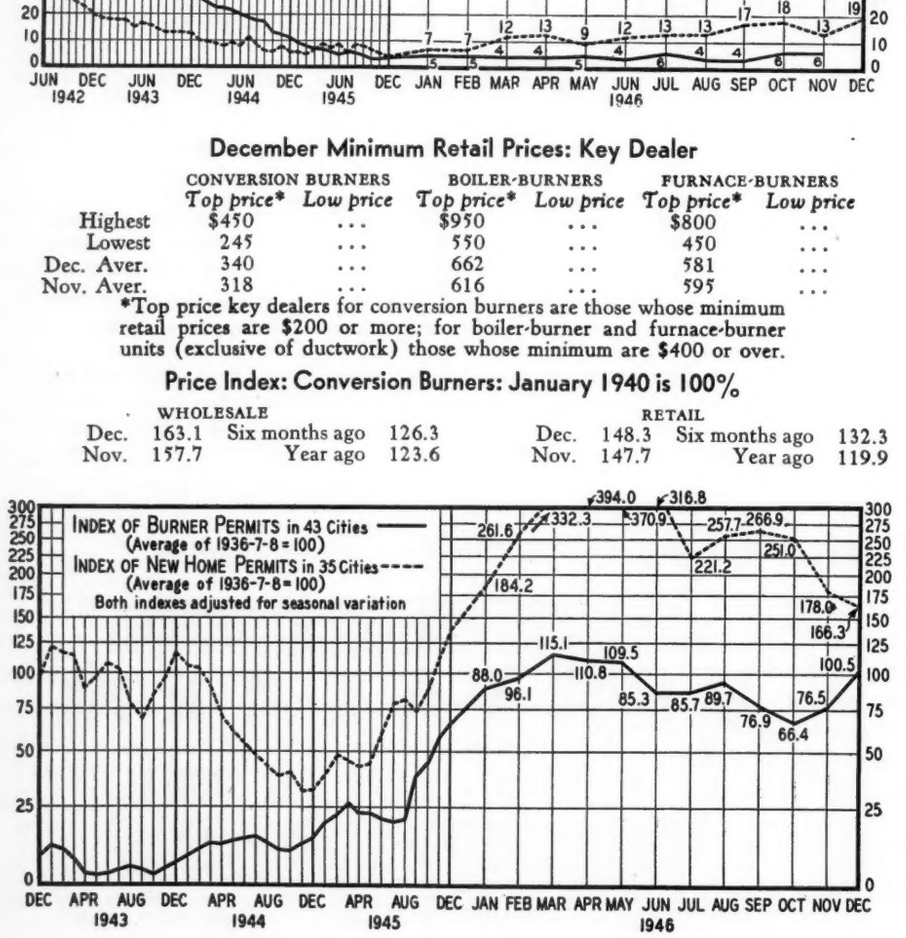
## December Minimum Retail Prices: Key Dealer

| | CONVERSION BURNERS | | BOILER-BURNERS | | FURNACE-BURNERS | |
|---|---|---|---|---|---|---|
| | *Top price** | *Low price* | *Top price** | *Low price* | *Top price** | *Low price* |
| Highest | $450 | ... | $950 | ... | $800 | ... |
| Lowest | 245 | ... | 550 | ... | 450 | ... |
| Dec. Aver. | 340 | ... | 662 | ... | 581 | ... |
| Nov. Aver. | 318 | ... | 616 | ... | 595 | ... |

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimum are $400 or over.

## Price Index: Conversion Burners: January 1940 is 100%

| WHOLESALE | | | | RETAIL | | | |
|---|---|---|---|---|---|---|---|
| Dec. | 163.1 | Six months ago | 126.3 | Dec. | 148.3 | Six months ago | 132.3 |
| Nov. | 157.7 | Year ago | 123.6 | Nov. | 147.7 | Year ago | 119.9 |




# *Oilheating Trends*

DECEMBER INSTALLATIONS of domestic oilburners and units are estimated at 54,893, a little more than double the 23,549 installed in the same month of 1945. This brings the total for 12 months of 1946 to an estimated 458,225 installations, simply adding the individual estimates published each month. This figure compares with an estimate of 455,218 installations, published in FUELOIL & OIL HEAT's January statistical issue and based on the large annual study in December, a deviation of less than one per cent. New orders booked in December were approximately 33,449, bringing the total 12 month bookings to 423,047, somewhat less than actual installations. Dealers still have, on the whole, a modest backlog of unfilled orders, smaller than they had a year ago however. Most dealers had so much grief over orders that had to be repeatedly delayed on installation that, as a rule, they now don't take orders until they have all materials within arm's length.

December installations of reporting dealers were divided: 79% conversion burners; 13% boiler-burner units; 8% furnace-burner units.

BURNER STOCKS: Dealer stocks of domestic oilburners and units on Dec. 31 were about 19,266, a new high point for the postwar period. It is still very few compared to prewar years, but indicates some easing up of pressures. Factory stocks on November 30, the latest available data, were 6,461.

SERVICE INCOME: December service department income of reporting dealers averaged $3,460, up 39% for the $2,498 reported by the identical dealers the year previous. November income was $2,739, October was $2,908.

IMMEDIATE DELIVERIES: A check was made again this month on the time lag necessary between taking a burner order and making the installation. Among dealers reporting from all sections, 35% can now guarantee installation within one week after order is signed; another 29% can be sure to get the burner going within one to four weeks; the next 11% can install for sure within five to eight weeks; the remaining 25% needs from nine to 15 weeks. Among the 65% of companies that require longer than one week, or in other words who cannot make immediate instal-

lations, three-fourths of the waiting time is due to factory burner shipments, and the balance due to shortage of installation materials. However, the longest factory time lag reported is nine weeks, which means that among all reporting dealers, nine weeks is the longest that they have to wait for factory deliveries.

HOLDING BURNER ORDERS: Now that burners are becoming more readily available and dealers are phoning people who placed orders months ago, not all such orders are standing up. A fair number of buyers say that they don't want the burner now. The composite experience of the reporting group is that 18% of such orders die or are indefinitely postponed. However, the individual percentages of dealers vary from a low point of 5% to a high of over 50%, depending largely upon the economic makeup of the community.

There are four principal reasons for not taking the burner when it is offered: 1) 40% of such people had placed orders with more than one company and had received another burner; 2) 23% decided the price had gone up too much, would wait and see if it didn't break later; 3) 21% reported that their incomes had dropped to where they couldn't make the outlay; 4) 16% had wearied of waiting for oil and had put in gas. Aside from those four principal reasons a number of others were stated, in about this order of relative importance: have enough coal to last until Spring; tired of waiting, lost enthusiasm; sold home or moved for other reason.

FUELOIL PRICES: Soft fueloil prices are a subject of wide discussion in the large consuming centers, particularly the Eastern tidewater cities. However, the thought has clearly been overemphasized, for only 6% of the fueloil distributors, countrywide, say that wholesale prices are soft to the point of there being any bargains about; only 10% say that retail prices are anything but firm. On the retail end, wherever soft price is acknowledged it is without exception attributed to small one-or-two-truck peddlers, who are cutting anywhere from 1/10 to ½¢. The industry has always had some of this, no doubt always will, so it is obvious that there is little cause for concern. Mild weather and overproduction of distillate will undoubtedly keep large lot prices soft at large harbor areas for a time, but this can be looked on as temporary. The public is happy to pay present retail prices for oilheating's convenience, and will probably stay that way.

FUELOIL MARGINS: Another topic of wide discussion at the moment is the adequacy of fueloil margins. Naturally, it's a perennial topic, but just now is getting unusual emphasis because of rising costs of fueloil distribution. Among all reporting fueloil distributors, 41% say that within the past six months they have had some margin increase. The amount of improvement reported varies from 1/10 to 3/10¢, averaging about 17 points. This is equivalent to a margin rise of around 8% . . . in other words, a gross income rise of that amount to balance against raised operating costs.

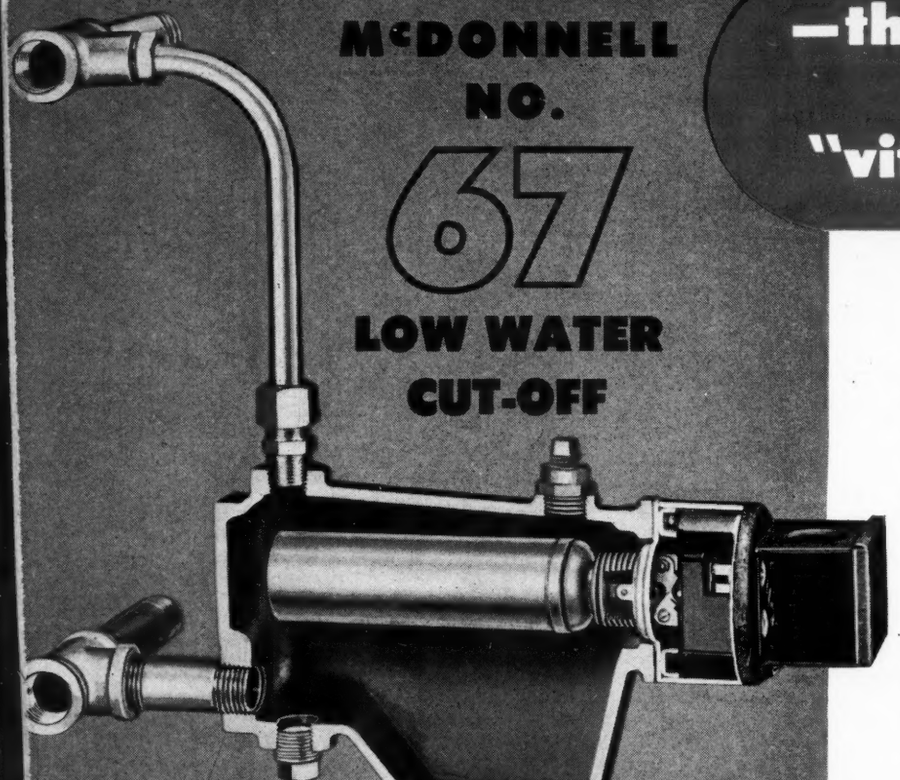
Estimates from all reporting distributors, whether or not they got margin relief, shows that overall costs of fueloil distribution went up 11.2% in the second half of 1946, comparing July 1, 1946 with January 1, 1947. Individual companies reported expense rises varying from 5% to 22% for the period.

## Oilburner* and Building Permits

| OILBURNERS | | | | | DWELLINGS | | | |
|---|---|---|---|---|---|---|---|---|
| December | | 12 MONTHS | | | December | | 12 MONTHS | |
| 1946 | 1945 | 1946 | 1945 | | 1946 | 1945 | 1946 | 1945 |
| .. | .. | .. | .. | Baltimore, Maryland | 195 | 104 | 4477 | 561 |
| .. | .. | .. | .. | Binghamton, New York | 4 | 1 | 120 | 37 |
| .. | .. | .. | .. | Boston, Massachusetts | 29 | .. | 221 | .. |
| 60 | 59 | 834 | 430 | Bridgeport, Conn. | .. | .. | .. | .. |
| .. | .. | .. | .. | Buffalo, New York | 51 | 11 | 252 | 63 |
| .. | .. | .. | .. | Des Moines, Iowa | 36 | 14 | 1192 | 110 |
| .. | .. | .. | .. | Detroit, Michigan | 276 | 476 | 8037 | 3341 |
| 50 | 28 | 766 | 171 | Elizabeth, New Jersey | 3 | 0 | 22 | 13 |
| 30 | 17 | 492 | 162 | Freeport, New York | .. | .. | .. | .. |
| .. | .. | .. | .. | Greenwich, Conn. | 8 | 27 | 194 | 52 |
| .. | .. | .. | .. | Hackensack, N. J. | 0 | 8 | 114 | 70 |
| 115 | 52 | 1085 | 655 | Hartford, Conn. | .. | .. | .. | .. |
| 18 | 13 | 520 | 120 | Irvington, N. J. | 0 | 0 | 21 | 3 |
| .. | .. | .. | .. | Lynn, Massachusetts | 6 | 1 | 64 | 8 |
| 35 | 15 | 244 | 71 | Meriden, Conn. | .. | .. | .. | .. |
| 195 | 59 | 1304 | 304 | Milwaukee, Wisc. | 73 | 56 | 1510 | 538 |
| 128 | 48 | 772 | 729 | Minneapolis, Minn. | 62 | 71 | 1531 | 728 |
| 27 | 15 | 454 | 114 | Montclair, N. J. | .. | .. | .. | .. |
| 38 | 24 | 597 | 268 | Mt. Vernon, New York | .. | .. | .. | .. |
| 22 | 37 | 511 | 373 | New Bedford, Mass. | .. | .. | .. | .. |
| 74 | 15 | 538 | 206 | New Haven, Conn. | .. | .. | .. | .. |
| 0 | 0 | 0 | 0 | New Orleans, La. | .. | .. | .. | .. |
| 41 | 24 | 457 | 207 | New Rochelle, N. Y. | 7 | 4 | 131 | 15 |
| .. | .. | .. | .. | Brooklyn-Queens | .. | .. | .. | .. |
| 835 | 325 | 7131 | 1971 | Manhattan, Bronx, Rchd | .. | .. | .. | .. |
| 185 | 46 | 621 | 205 | Norfolk, Virginia | 17 | 10 | 238 | 69 |
| 1 | 0 | 7 | 3 | Oakland, Calif. | .. | .. | .. | .. |
| 102 | 43 | 986 | 259 | Omaha, Nebraska | 52 | 16 | 805 | 292 |
| 16 | 11 | 283 | 96 | Orange, New Jersey | 1 | 16 | 5 | 292 |
| 30 | 17 | 578 | .. | Passaic, New Jersey | .. | .. | .. | .. |
| 39 | 17 | 939 | 251 | Paterson, N. J. | .. | .. | .. | .. |
| 913 | 338 | 8283 | 1458 | Philadelphia, Pa. | .. | .. | .. | .. |
| .. | .. | .. | .. | Plainfield, N. J. | 16 | 2 | 103 | 19 |
| 69 | 34 | 548 | 267 | Portland, Maine | 2 | 0 | 104 | 6 |
| .. | .. | .. | .. | Portland, Oregon | 56 | 136 | 1901 | 596 |
| 50 | 34 | 958 | 200 | Providence, R. I. | 9 | 0 | 138 | 20 |
| .. | .. | .. | .. | Reading, Penna. | 0 | 0 | 88 | 22 |
| .. | .. | .. | .. | Richmond, Virginia | 39 | 39 | .. | 598 |
| .. | .. | .. | .. | Rockville Center, N. Y. | 18 | 37 | 89 | 41 |
| 28 | 9 | 251 | 70 | Salem, Massachusetts | 2 | 0 | 18 | 4 |
| 143 | 33 | 1010 | 206 | St. Louis, Missouri | 4 | 16 | 316 | 47 |
| 208 | 92 | 1544 | 458 | St. Paul, Minnesota | 42 | 56 | 1140 | 527 |
| 18 | 29 | 262 | 251 | Schenectady, N. Y. | .. | .. | .. | .. |
| .. | .. | .. | .. | Seattle, Washington | 126 | 121 | 2520 | 1364 |
| .. | .. | .. | .. | Springfield, Mass. | 26 | 5 | 584 | 182 |
| 52 | 33 | 381 | 156 | Stamford, Conn. | .. | .. | .. | .. |
| 21 | .. | 326 | .. | Syracuse, New York | .. | .. | .. | .. |
| .. | .. | .. | .. | Trenton, New Jersey | 0 | 0 | 15 | 5 |
| .. | .. | .. | .. | Utica, New York | 3 | 1 | 40 | 9 |
| 315 | 101 | 2711 | 595 | Washington, D. C. | .. | .. | .. | .. |
| .. | .. | .. | .. | West Orange, N. J. | 2 | 4 | 110 | 17 |
| .. | .. | .. | .. | White Plains, N. Y. | 1 | 0 | 30 | 6 |
| 85 | 37 | 740 | 176 | Wilmington, Delaware | 2 | 24 | 194 | 34 |
| 109 | 54 | 898 | 357 | Worcester, Mass. | .. | .. | .. | .. |
| 3867 | 1,659 | 37,031 | 10,789 | *Totals* | 1139 | 1196 | 26,103 | 9,091 |
| +133.1 | | +243.1 | | *Percent Change* | —4.8 | | +187.1 | |

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

# McDONNELL NO. 67 LOW WATER CUT-OFF



• The No. 67 is for automatically - fired steam boilers of any size; maximum boiler pressure, 25 lbs. Electrical ratings: A.C. ¼ hp. 115-230V.; D.C. ¼ hp. 115V.

# —the best guardians of that "vital quarter-inch"

A LOW water cut-off isn't one of those things that has to work right just most of the time. It has to work right *all* the time. When the water line crosses that vital quarter-inch level in the gauge glass, the boiler is doomed unless the cut-off "clicks" right then and there!

That's why we have been so particular about every detail of the design and construction of the McDonnell No. 67. That's why you should be equally particular about insisting on the dependable No. 67 for all automatically-fired heating boilers.*

The No. 67 has the McDonnell Quick-Hook-Up for easy, accurate installation in the gauge glass tappings; the packless (bellows) construction; the deep sediment chamber; the large-area blow-off valve, and many other distinguishing features. And remember that the same basic dependability is found in —

## McDONNELL "BUILT-IN" TYPE LOW WATER CUT-OFFS

In most modern boilers a tapping is provided for the installation of the McDonnell "Built-in" as illustrated here. It incorporates the construction which has given new meaning to dependability in the No. 67. An outstanding feature is the self-cleaning float shield which keeps the cut-off operative even when a large amount of sediment and foreign matter is present in the boiler water.

The extra switch for operating the McDonnell No. 101 Electric Water Feeder is especially valuable in the "Built-in" Cut-off because it solves the problem of automatic water feeding for the modern dressed-up jacketed boilers.

*Ask for current condensed catalog giving complete information on McDonnell Boiler Water Level Controls for boilers of all sizes, types and operating pressures.*

**McDONNELL & MILLER, 1310 Wrigley Bldg., Chicago 11, Illinois**

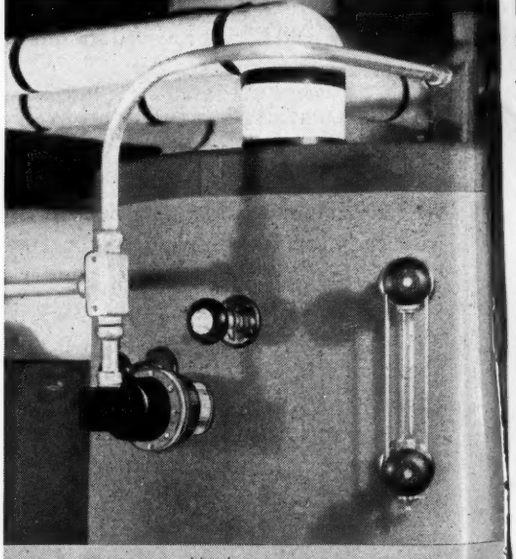
*Doing One Thing Well*

REG. U. S. SAFETY CONTROLS PAT. OFF.

No. 169 No. 369

No. 69

*If the boiler owner is willing to spend a few dollars more, a McDonnell Feeder-Cut-off Combination is still better. It makes the boiler water level as automatic as the firing.



• Typical installation of "Built-in" Low Water Cut-off. Types are available for all makes of boilers having provision for them. Some typical "Built-ins" are illustrated opposite.

©M.&M.

# McDONNELL *Boiler Water Level Controls*

# Oil Heat, Wholesale Only

## Allied Appliance Co. Plans Large Volume Without Retail Sales

by
A. E. Coburn

Ask any experienced oilheating man for a definition of an oilburner distributor and you are likely to get the same answer: "A big retailer with a special factory price." There are notable exceptions to that definition, of course, but the lack of any widespread practice of jobbing oilburners creates the feeling that most concerns offering burners at wholesale are doing it as a sideline to their larger retail business. Some manufacturers, too, have had disappointing experiences with wholesale distributors. They have given sizable territories to firms who showed promise, only to find that sales were confined largely to the company's retail area, and little effort was expended to cover the whole territory. Many burners sold at wholesale were poorly installed and improperly serviced.

A few years ago some of the large independent oil companies were given territories with the promise that they would blanket the area with retail dealers. In too many cases the companies did an excellent job of retail selling in the delivery area they served, and did nothing outside their retail marketing area. All these experiences have created the impression that domestic oilburners can not be sold satisfactorily by independent wholesalers. The belief has been given weight by the recent change in policy of some of the industry's largest names, who have given up trying to get distribution through independent wholesalers in favor of selling direct to dealers.

In the face of the popular belief that oilburner distributors are the hard way to get coverage and build prestige, one of the industry's better and more stable companies has gone heavily for wholesale distributors. York-Shipley, Inc., York, Pa., is sending all its domestic burner volume through distributors, and plans to strengthen and complete its chain to blanket the country. One of the company's most enthusiastic supporters of its wholesale policy is the Allied Appliance Company at Boston, one of two York-Heat distributors who are handling the line entirely at wholesale, and have no retail oilheating business. All other distributors have territories outside their own retail areas which they are charged with covering through dealers of their choosing.

The Heating Division, one of several in the Allied Appliance Co., is headed by Mitchel Landau, an old hand in the oilheating business, who is not at all awed by wholesaling in the oilburner industry. Mr. Landau believes the failures of other wholesalers point the way to future success, and he has set up his organization to try to avoid those mistakes. The Division is distributing the York-Heat line and a few oilheating specialties, but it does not offer general heating equipment. There is no intent to compete with general heating supply houses, but only to act as an oilheating distributor.

"One of the prime requisites of a successful distributor," Mr. Landau emphasizes, "is enough territory to make a profitable operation possible. There must be a large enough potential so a distributor can concentrate his efforts on well qualified dealers." The company originally had Maine, New Hampshire, and all of Massachusetts except the four western counties. Recently Rhode Island has been added to Allied's territory. This territory allows the company to travel four field salesmen and a field engineer, all of them experienced and competent to help dealers with their oilheating problems, whether they be problems of management, sales, installation or service. The company also conducts its own training program on sales and service, both in the field and at the home office in Boston.

Each of the salesmen is charged with knowing his territory intimately. He works every town in his area, and gets as much detail as possible on every oilheating dealer in each city. Five points are considered carefully before any proposal is made to a dealer. Salesmen's reports are made on card forms and filed by towns in each territory, so that the home office at any time can evaluate the dealers in the community. Supplementary reports are made on each dealer from time to time.

The five points on which dealers are rated are: (1) Merchandising Ability—the volume of business he does and the methods he uses to get business, number of salesmen, amount of advertising and type of advertising; (2) Installation Practice—does he do good work and use good materials; (3) Adequate Service—are customers satisfied; (4) Financial Stability—does he make money and does he pay his bills; and (5) Community Reputation—is he well liked and respected as a local businessman.

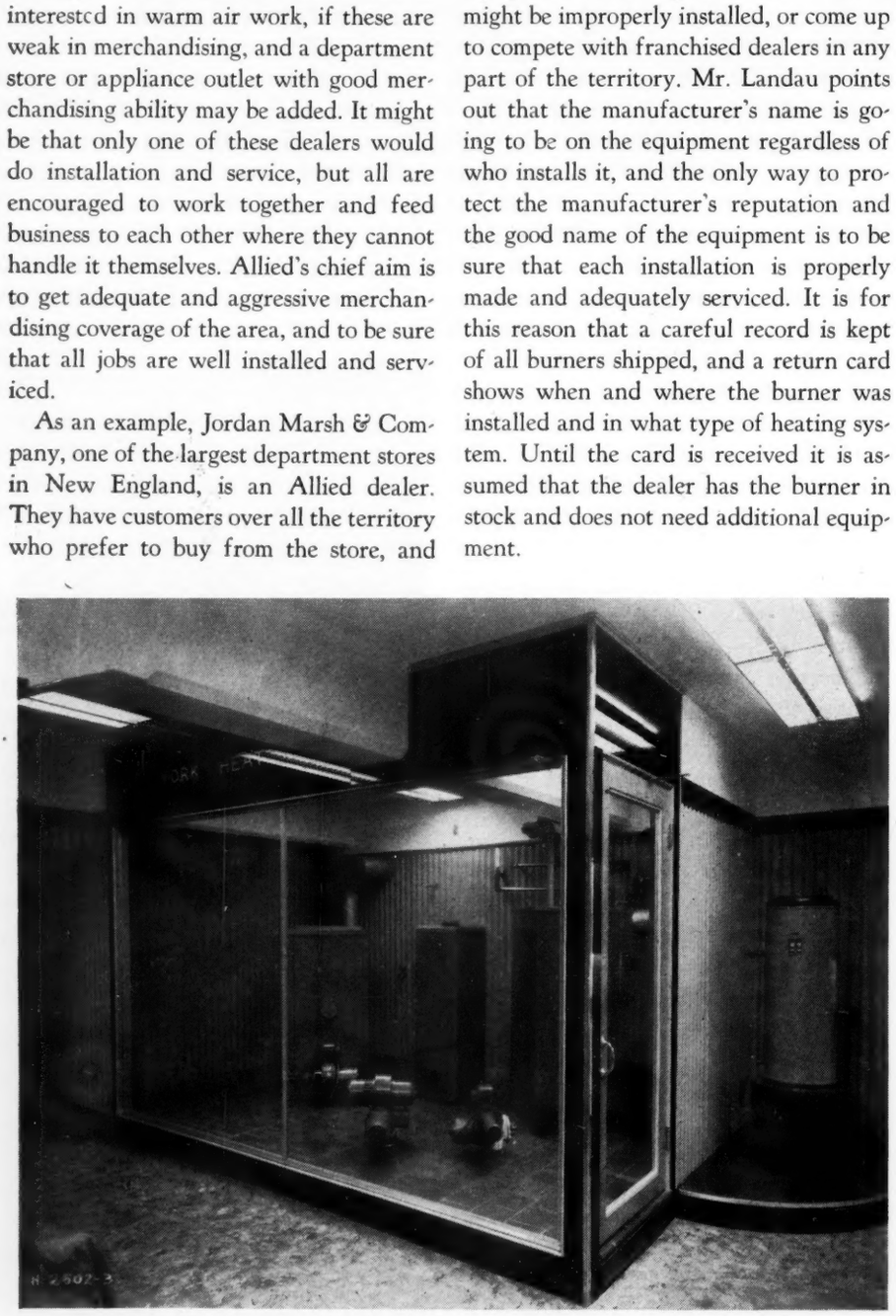
Mitchel Landau

Dealers are franchised to handle the York line exclusively, but during the period when it was impossible for Allied to supply all the burners and units every

dealer needed, no effort has been made to enforce this provision. However, no dealer is given an exclusive territory, and more than one dealer frequently is appointed in a town with the understanding that all will work together to cover the whole market. The key dealer—that dealer who best qualified under the five points above—usually is named first, and other appointments are made with his approval. The key dealer in a city might be a good local oil company, while other dealers might be a heating contractor who is qualified to do steam and hot water heating, a sheet metal contractor who is interested in warm air work, if these are weak in merchandising, and a department store or appliance outlet with good merchandising ability may be added. It might be that only one of these dealers would do installation and service, but all are encouraged to work together and feed business to each other where they cannot handle it themselves. Allied's chief aim is to get adequate and aggressive merchandising coverage of the area, and to be sure that all jobs are well installed and serviced.

As an example, Jordan Marsh & Company, one of the largest department stores in New England, is an Allied dealer. They have customers over all the territory who prefer to buy from the store, and they frequently receive orders from distant points as a result of extensive advertising. Since the store is a non-installing dealer, all their sales are installed and serviced by the nearest qualified installing dealer, and Jordan Marsh is billed for the work and a year's service. Prices depend on the specifications for the job and the local regulations.

All dealers sell an installed job. They do not make over-the-counter sales to customers or dealers, and each burner is accounted for by serial number as it is installed. This policy is designed to keep equipment off the open market where it might be improperly installed, or come up to compete with franchised dealers in any part of the territory. Mr. Landau points out that the manufacturer's name is going to be on the equipment regardless of who installs it, and the only way to protect the manufacturer's reputation and the good name of the equipment is to be sure that each installation is properly made and adequately serviced. It is for this reason that a careful record is kept of all burners shipped, and a return card shows when and where the burner was installed and in what type of heating system. Until the card is received it is assumed that the dealer has the burner in stock and does not need additional equipment.



**A Live Display** *of oilfired units in a corner of the showroom provides office heat and hot water.*

As a further follow-up, salesmen are required to spot check dealers' installations at intervals. This is to be sure that the installation is proper and the customer is satisfied. "All our activity is aimed at customer satisfaction," Mr. Landau explains. "In my years in the oilheating business I have learned that customer satisfaction is the corner stone of continuing success, and almost no effort is too great to insure that satisfaction. It is good business for everybody from the customer himself to the manufacturer.

In addition to the general aspects of the installation which the salesmen check, the field engineer is charged with spot checking the efficiency of installations, and making recommendations for the improvement of the installation and its operation. The engineer's report to headquarters by serial number of the burner includes the efficiency reading, nature of the installation, wiring, combustion chamber, setting of the burner and type of accessories used. All reports include any recommendations that were made for improvement, and the home owners' comments.

Though the lines of products distributed by Allied Appliance ranges from Eveready flashlights and batteries to complete Youngstown kitchens, there is no tie-in between lines. The management believes that outlets should be chosen for their ability to sell and service a product, and that oilburner dealers do not necessarily constitute the best outlets for radios, ranges or floor coverings. Each Division distributes through its own outlets, selected and serviced by its own staff. Mr. Landau and Frank Halloran, assistant manager of the Heating Division, with a secretary, constitute the headquarters staff of the Heating Division.

Oilburners and units are sold only to franchised York-Heat dealers, but the accessory lines are offered to the entire field. The company has some lines exclusively in the territory, but other specialties are sold on a non-exclusive basis. These include chemicals, draft and low water controls, filters, air valves, circulators and flow valves, testing instruments and similar specialty items of interest principally to oilheating men.

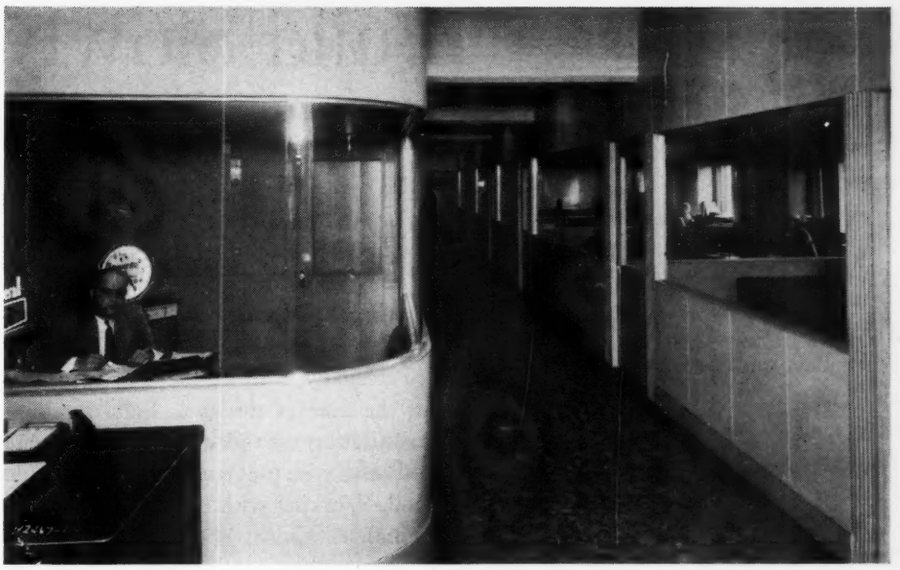
Besides field help which the force gives dealers there are other services available to the management and employees of retailers. Help with advertising and promo-

tion is available from the office through Guy G. Smith, promotion director for the entire range of Allied lines, who has had many years of broad experience in the field. There are facilities for holding sales and service classes including the presentation of moving pictures, and extensive showrooms where all the firm's products are on display. Besides individual oilburners on the floor, there is a glass-enclosed room in one corner of the floor where York-Heat equipment is under fire. Heat from these boilers is used to warm the offices and supply domestic hot water. Executive and general offices and the showroom are air conditioned all year.

Allied's physical plant consists of a seven-story building at 111 Berkeley Street, Boston, containing 90,000 sq. ft. of space. A railroad siding accommodates four cars inside the building, and three freight elevators serve all floors. Loading platforms will handle seven trucks at a time; two at the front of the building and five at the rear. Besides the entire York-Heat line of burners and units, the company also will stock complete service parts for all models and types, as well as the accessory equipment it will distribute.

The company, headed by Samuel Dane, president and Ralph S. Cron, vice-president and general manager, sells nothing at retail.

"We never plan to be in competition with our dealers," Mr. Landau says. "We have no retail business for which we ever will have to withhold equipment we receive. All our equipment, and all our attention is directed to our retail dealer accounts and our one interest is in seeing them sell more equipment and make more money.



**Executive Offices** *of the company provide private offices for Division heads and their assistants and secretaries.*

"It frequently is asked," Mr. Landau continues, "whether we can compete in price when equipment once more is readily available. Because of the volume we expect to put through his office into a fairly large market, we believe we will be competitive with other name-brand burners. But more important, we think, is the better cooperation and more complete service we can give our accounts. No distant factory could afford to keep an organization large enough to serve dealers in the way we plan, or to get the complete coverage of the territory we contemplate under our field merchandising plan."

Allied now has 300 retail oilburner dealers, but these are being carefully rechecked regarding qualifications and staying power. It is planned to keep only the most active and promising of the present accounts, and make available all possible equipment to them this year. The management believes eventually there will be about 400 dealers required to give them the oilheating market coverage they contemplate, but the company is in no hurry to add dealers faster than they can be well served.

In the meantime the old-timers in the oilheating business are watching this "wholesale only" oilburner operation, and wondering if there really are three profits in a burner. Many swear they have investigated thoroughly and can find no more than two, but Mitch Landau is just as sure these other old hands have overlooked some of the more important details.

"Three profits, indeed!" Mr. Landau argues. "There never has been but one profit; the difference between the actual cost and the consumer selling price. This may be divided in a number of ways between the production line and the final installation, but every step along the way must be paid for, regardless of the distribution method. We are splitting the profit three ways in an attempt to do a more effective distributing job. By concentrating on an adequate territory we believe we can do a better job than any national manufacturer can do for himself in the same territory."

**General Displayroom** *of Allied Appliance Company presents the complete line of merchandise distributed.*

# Build Slowly

## A Story Against Pressure Selling and Commission Methods

by
Vernon E. "Sam" Vining*

A DEALER WALKED in to see me the other day and asked what I thought about his recruiting ten salesmen right now and training them for the period which we know is approaching.

I told him I thought he was crazy.

From my own experience I know that it is practically impossible to employ ten men at one time and train them properly without a cost that will make any merchant shudder. Thousands of dealers who have tried just that plan in the last 25 years will bear me out.

In the first place, every plan I have ever known for recruiting a large number of high grade men who were willing to go to work at approximately the same time has proved impractical. Good men don't come in bunches like bananas. You select them one at a time when you can find them—and convince them they should join your organization. The speed with which you build your organization, therefore, is entirely dependent on when you can get the men.

Any other plan than individual selection as you can get them means that you are going to fill out the group with men who are sub-standard, and three months after your course is completed you will find most of your class have become but memories except for the amount of money you spent on them while they were with you.

Past experience also indicates that there are very few organizations in the whole United States that have the ability to train large groups at one time. This ability is largely dependent on manpower centered around some one man whose entire business is training, plus supervision by men who are experienced and successful in directing the efforts of new men. The life insurance people found that out years ago, and every general agent has a permanent training staff that does nothing else.

The principle is the same whether it's life insurance or oilburners or refrigerators or what have you in the specialty selling field. The principle is also the same whether you are training men to sell on the floor or house to house.

Personally, I think the only safe way for the average dealer to build a selling organization is to pick one man at a time and work with that man until he has made good. Working with the man is a fundamental.

When you get that one man trained so that he is earning his way and making a living, pick another man and do it all over again. Now you are building a solid organization that will be with you for years if their opportunity with you is big enough to hold them.

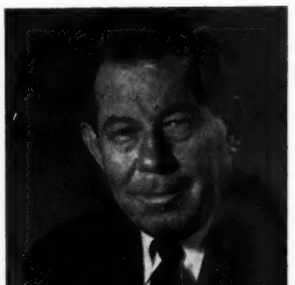
Someone is going to say, "Well that's a slow way to build an organization." Of course it's slow, but it's solid and permanent. In addition, one well trained man will produce more business than four men who are half trained. And, one poorly trained man can ruin more good business than four good men can follow up.

**This is the first of three articles by Sam Vining outlining some of his advanced selling methods and beliefs. The second will be on sales training and the third will explore sales management. If experience is a guide, the next two articles will be as contentious and unorthodox as this one. Vining has a broad following as convention speaker on sales methods and as author of selling books.**

How are you going to find this one man to start out with? I'll give you my own pet formula. It may not fit in your case but it may produce an idea anyway.

Look around town until you find a man of the right type and the right background to fit into your business. Imagine you are looking for a partner who can be trained to sell. Actually every successful salesman is a partner in the business even though he owns no share of it.

Remember this: the men you send out from your organization represent you and you must have certain standards. Any man you hire below your standard drags you and your organization down to his level. When the prospect talks to a poor salesman he judges your organization by that man. You can't run around later and say, "Mr. Prospect, it just happens you talked to one of my poorer men."



Vining

Finding the man is not always as hard a job as it may seem—if you go at it simply. Don't grab in the dark or put your hand in a poke, and expect to pull out a world beater. Finding men is a serious job, in fact, part of your whole future depends on finding the right man.

Here are some simple suggestions.

Ask among your friends and business acquaintances. Tell them you need a young man in your business. Tell them about the opportunities this man will have. Some of the men you talk to will have sons and friends who are looking for new connections.

Talk with the Veterans Bureau, Chamber of Commerce, Merchants Association. Talk to the young men of your acquaintance.

Don't hide your need; boast about it—it proves your business is growing.

The man you are looking for may be the kid across the street who grew up when you weren't looking.

Maybe—it's your own son. I think the smartest deal in all the world is a sign over a going business reading "John Doe & Son."

*Merchandising Consultant, Westinghouse Electric Corporation.

Maybe it's your son-in-law. The chances are your daughter was as smart in picking a husband as her mother.

What I am trying to say is this: Look in the right places if you want the right kind of men. If the opening you have doesn't offer opportunity enough to attract the sons of your friends or the sons of other successful business men, or even your own son, the job isn't worth while anyway—it doesn't make much difference whether you ever find a man to fill it.

Having found the man you want, bring him into your office and tell him your story. Tell him what you like about the business, what his opportunities will be with your organization. Since the man is liable to be thoughtful, suggest that he ask around town, talk with his wife or his folks. Make joining your organization a serious business.

Then if you employ him, accept your responsibility.

I emphasize the dealer's responsibility towards the man because in years past thousands of dealers failed to accept that responsibility and as a result failed to build a successful organization.

How much are you going to pay him? I recommend you look around town and find what other young men with his background are making in other lines of business; in retail stores or in a factory or a bank, or in any one of a dozen other places that employ men of similar caliber. Having found out what these men make, don't ask the man you hire to work for less.

Pay him what he would be worth in any other business and then train him until he earns it.

I suggest you'll save money if you put him on a straight salary plus an over-ride that will let him make more money than the men he runs around with.

Accept your responsibility to teach him how to earn this money. Don't expect him to know how to go at it. Remember that in his first months he will learn nothing except what you teach him. If, in fact, you have a feeling that you won't have much time to spend training him, I suggest you hire an experienced man or give up the idea of having sales people at all. An organization that can't take time to train won't be able to hold a permanent good sales force anyway.

Someone is going to say, "What? Pay a salary from the start?" And I answer, "Yes, certainly."

**Sam Was a Burner Salesman**

*This is an incident described in his book, "Sam Vining's Selling Slants":*

*I called on an architect in Detroit to sell him an oilburner for his own home.*

*I found a bewildered man. He had listened to so many sales talks . . . so many claims and counterclaims, that he was about disgusted with the whole idea of burning oil.*

*In exasperation he said to me, "How in the world can a man separate the chaff from the wheat? On what basis should a man make a decision as to which burner to buy?"*

*"I'll tell you how," said I, "Just put your name right here, and when the rest of them come around tell 'em it is all settled."*

*I shoved an order blank in front of him, put my fountain pen in his hand, and—*

*He signed it.*

*You know without my telling you what I did when I got out of his office. What,—me canvass any more that day—with an eleven hundred dollar order in my pocket—a high grade, high pressure salesman like me—?*

*Not on your life. I had to go back to the office, find the gang and tell 'em "What he said" and then "What I said"—then "What he said" and how I, cleverly, did thus and so.*

*As I walked into the office my fame had evidently preceded me because the office girl said, "Did you sell a burner to John Architect?"*

*"Did I," said I, "Ask me—and how."*

*"He just called up and canceled," said she.*

*And I never did get the order back—or any business from his office.*

*I had forgotten the big selling idea that cleverness will never take the place of real selling.*

*An item must be sold whether before, or after you get the order.*

That answer comes from experience, too. You'll save money if you do it that way.

Let's analyze.

If you hire a man on straight commission you have absolutely no control over his time or methods of work. He actually isn't working for you—he is working for himself. If he fails, you have wasted a lot of time and so has he. If he becomes successful he owes you absolutely no loyalty, is under no obligation to your whatsoever. Bear in mind he took all the risk; you took none. And if you find him shopping around looking for another job, don't complain; you laid the groundwork.

Drawing accounts are deadly. The man at the beginning hasn't much chance to earn his drawing account. It he does meet it, there's an element of luck you don't dare count on.

When he does make a sale and goes home all encouraged, full of pep, and tells his wife about it, she says, "Oh, goody! Now the kids can have some shoes." Then he has to explain that while he made a delightful commission on the sale, he owed it all to the boss—so they get no extra money this week.

The second or third time that happens his wife bursts out crying and says, "Please, honey, get a job like other men have—with somebody some place where we know we're going to have some money. We just can't go along like this."

Anybody who thinks a pep talk in the morning can compete with the little wife's tears is just not a married man.

So—you lose the man, you lose the money, you lose the time you put in on him. Another "red ink kid." Then you start all over again.

Do you see what I'm driving at? I'm saying: Pick your man carefully and back up your own judgment with cash and the amount of your time it takes to see to it that the new man takes his proper place in your organization.

Here's something for you to think over: I wouldn't even call this new man a salesman. I'd make him so much a part of the organization that he never would think of himself as anything but an associate. I'd treat him like a partner and I'd let the whole world know that he was a vital part of my organization.

There are two or three reasons for that line of thinking. First, you will find that he will be able to do a better job of selling. Many, many of your prospects hesitate to do business with a "salesman." They prefer to do business with the boss or someone who is a little closer to the picture than their idea of what a salesman may be. Everybody knows that it's easier for the boss to close a sale than it is for one of his salesmen—even if the boss doesn't cut prices.

Dropping the name "salesman" also throws more responsibility on the man. He becomes so much a part of your organization that you can lean on him in a dozen ways. He also feels a deeper responsibility for closing sales on the right basis.

A third reason, which is not theoretical, is that if you have picked the right type of man, the very idea getting around among his friends, associates and prospects that he is a responsible man in the organization will raise your reputation.

The only exceptions to the commission and drawing account rule that I have laid down are large organizations, such as department stores and major furniture stores, where a floor salesman can actually be guaranteed a certain number of prospects every day.

Even public utilities, with their crews of specialty men in the field, have in the main gone to salary and commission because they can control the work of their men. You see, the commission man always runs out and gets the easy order; there is no way to get him to develop the hard territories. He is working for himself, not the company—and what is best for the company has no relation to his particular money needs.

Right now I can hear a thousand dealers screaming that I am wrong in my conclusions. And maybe I am. But my own experience and observation indicate otherwise.

Naturally there will be a certain percent of people who will say, "Well, I wouldn't work any other way than on commission."

My own answer in that case is: "You can't work for me because I am going to control every working hour of any man who works in my organization."

Then too, I wouldn't gamble that these men are telling the absolute truth. Shove a certain amount of security under their noses and the chances are most of them will waver. Besides, that statement from an older man who is experienced, been through the mill, has an entirely different meaning than it does from a younger man just starting out with the responsibility of finding a way to make a living for a wife and a baby.

Some of these men mean it when they say; "No salary"—most of them later become dealers.

I can also hear people saying, "Well, all that may apply in the electric appliance business, but how about oilburners?" My answer is that I see no difference between the two businesses. I spent a number of years in the oilburner business. I punched doorbells in Detroit until I had corns all over my thumbs. Later, I became a dealer (and still punched doorbells), and then a distributor. I shifted to electric appliances and in the shift found no change whatsoever.

I have told you what I think. I have probably started an argument. And, I'll bet FUELOIL & OIL HEAT would like to hear what you think on the same subject. Why don't you write and tell them? Kick the tar out of me and my funny ideas if you want to. I'm big and fat and old in the business and can take it.

# New Veterans Bill Taps Broad Economy

ONE OF THE MOST unusual bills ever introduced in Congress, and one that if passed could have extraordinarily far-reaching effects, is H. R. 157, presented January 3 to the new congress by Representative Wolcott, Michigan Republican. The bill proposes to set up a "Veterans RFC" which would make available loans for almost unlimited purposes, not only directly to veterans, but also to anyone who could prove that he had a worthy project that would favor veterans in employment or in other ways be substantially beneficial to veterans. Four other congressmen, two Republican and two Democratic, introduced bills that were identical, word for word, to H. R. 157. All of them were referred to the Committee on Banking and Currency, which will decide who shall get credit and publicity by having it called his bill. The other four sponsoring representatives are Kearney of New York, VanZandt of Penna., Kefauver of Tenn. and Spence of Kentucky. Their bills are, respectively, H. R.'s 248, 459, 521 and 589.

Because the bill has considerable support from both parties as well as from the White House, there is good probability of its passage, though no doubt modified. In its present form the bill would set up the "Veterans Employment and National Economic Development Corporation," with a half billion capital subscribed by the U. S. Treasury and this to be augmented by not more than five billion dollars that may be outstanding in notes, debentures, bonds, etc.

Loans would be made to veterans or other persons who can prove that they will facilitate substantial employment opportunities for veterans. Included in the numerous purposes for which loans can be made are: to help a veteran to go into business by supplying funds for land, buildings, equipment, supplies and working capital; to veterans or others to expand existing businesses, construct or operate multiple tenancy industrial structures, conduct industrial research; lend to municipalities or other public bodies for self-liquidating public works; make loans to schools to expedite veterans training; loans for housing veterans' families, either for individual occupancy of the borrower or to finance large scale building projects; render technical advisory service concerning business, vocations, professions, methods and techniques; to speed the disposal of surplus property in line with veterans' requirements; to guarantee loans made by banks for any of the purposes described.

The need for the bill is said to lie in the fact that some seven million veterans are now at "the bottom of the employ-

(*Continued on page 140*)

# Firebox Design for Industrial Burners

## Calculation and Construction Must be Right for Heavy Oil

by

Kalman Steiner*

THE importance of a correct firebox to the success of an industrial oilburner installation cannot be overemphasized. To a large extent, the firebox governs the maximum output of the boiler and, together with draft control, the efficiency of combustion. The dealer will find that an ample reward, in the form of fuel savings, will derive from studying the conditions that affect his installation, and from designing a combustion chamber in accordance with proved principles of combustion and certain practical considerations that enter into firebox construction. In addition, the ultimate life of the refractories depends upon the proper observance of this procedure.

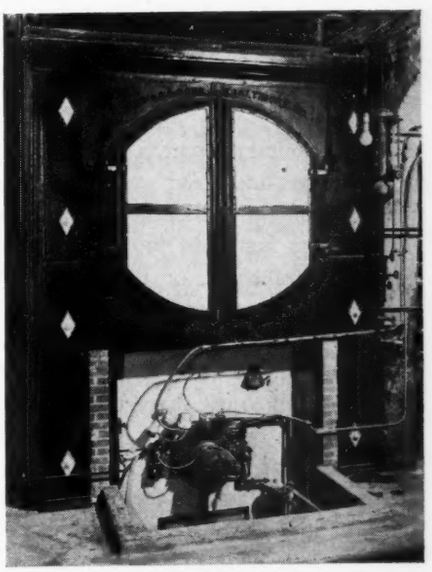
The primary function of the firebox is to provide a suitable environment for the combustion process. The ingredients of the process are of course fuel and air. Combustion is the chemical reaction that occurs when a mixture of fuel and air is raised to the ignition temperature. Although the process is rapid, combustion is not instantaneous—sufficient time must be allowed for the process to be completed within the environment of the refractory. Should the burning fuel encounter the water cooled surfaces of the boiler before combustion is complete, there will result a deposition of carbon (soot), or smoke, or both. The incandescent surfaces of the firebox reflect heat into and thereby raise the temperature of the reacting substances. It is a well-known fact of chemistry that reactions occur more rapidly at elevated temperatures. This is the reason why preheating of the air supplied to the fire is beneficial, but preheating of the air cannot be accomplished in all cases. It will be obvious that another condition essential to good combustion is thorough mixing of air and atomized fuel, but it is the oilburner itself that must prepare the fuel for combustion and mix it with the primary air supply that initiates the combustion. Complete and efficient combustion, however, depends upon the firebox design and introduction of secondary air.

The secondary duty of the firebox is to protect the non-refractory portions of the boiler setting from the heat of the flame. Concrete, common brick and metal cannot be subjected to high temperature, although metals and ceramic products vary themselves in ability to resist deterioration by heat. In general, the materials used to support the boiler are non-refractory and must be shielded from heat by the refractory, and refractory materials have but limited load-bearing properties and must not be used to support the boiler. The boiler setting and firebox must be constructed in a manner that will permit of renewing the refractory when necessary, without disturbance of the boiler supports.

### Base Design on Heat Release

The basis of design of a combustion chamber is the rate of heat release. By this is meant the amount of heat released by the combustion of the fuel, expressed in Btu per cu. ft. of combustion space per hr. Opinion varies as to the optimum rate of heat release for an industrial oilburner, but general practice is to design for 30,000 Btu per cu. ft. per hr. The combustion volume should be proportioned on the maximum load to be developed on the boiler. Since a boiler horsepower is equivalent to a boiler output of 33,475 Btu per hr., assuming an overall efficiency of 70 per cent, it will be necessary to release 47,820 Btu per hr. in the firebox. At the specified rate of heat release and efficiency, therefore, there will be needed very close to 1½ cu. ft. combustion space per developed boiler horsepower. Or again, in terms of equivalent direct radiation, at the same assumed efficiency, since 1 sq. ft. EDR is equivalent to an output of 240 Btu per hr., it will be necessary to release 34,300 Btu per hr., to carry a load of 100 sq. ft. EDR, which represents a ratio of 1.1 cu. ft. combustion space per 100 sq. ft. EDR. Finally, allowing 148,000 Btu per gallon as the calorific value of the fueloil, there will be needed 5 cu. ft. of combustion volume for each gallon burned per hr. It should be noted that in some municipalities local ordinances establish the maximum allowable rate of heat release.

In designing his firebox, the dealer has four methods of gaining additional combustion volume over that afforded by the conventional hand-fired setting. The most commonly used method, especially for existing boiler installations, is to dig a pit under the boiler, deepening the clearance between boiler shell and floor. The next most popular way is to set the boiler on a curb, raising it above the usual clearance between shell and floor; this is frequently adopted in setting new boilers.

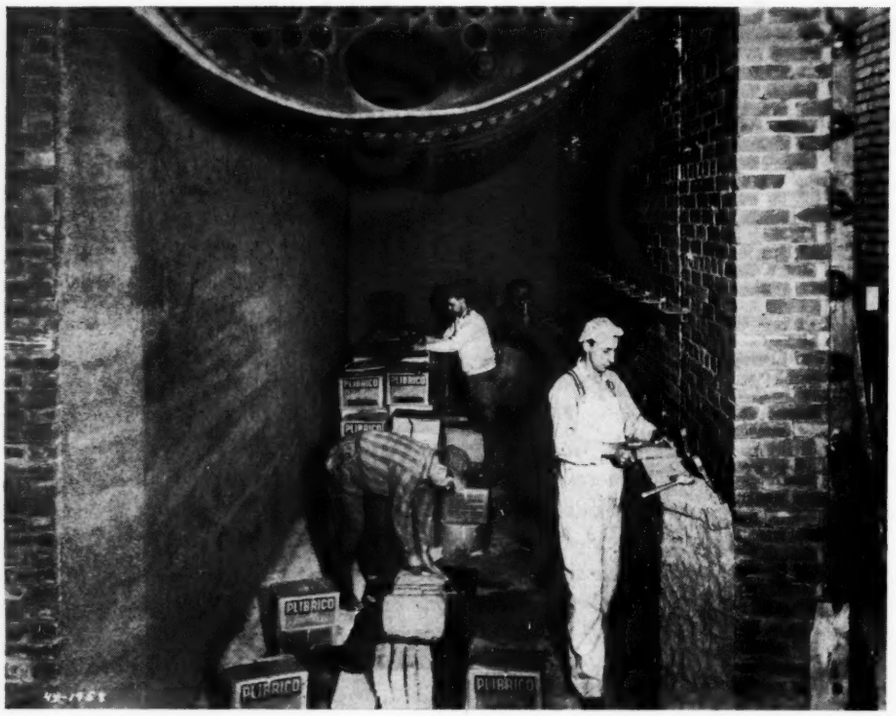


**Pitted Floor** *in front of this horizontal return tubular boiler makes possible more combustion space.*

The third way of gaining more combustion volume is to construct an extension to the normal boiler firebox—a dutch oven effect. Lastly, and least resorted to, the boiler setting can be widened, at the same time that other structural changes are made to deepen or lengthen the setting. Under certain and rather unusual conditions, it may be necessary to widen the setting for another reason—to gain more clearance between side walls in order to prevent flame impingement.

Combustion volume may be considered

*C. Hoffberger Company, Baltimore.




**Plastic Refractory** *being applied to HRT boiler. Red brick walls contain alloy steel hooks and shelves to support refractory.*

the space contained within the side walls of the firebox and boiler water legs, from the level of the firebox floor up to the level of the first tube into which combustion gases enter, or between which combustion gases flow (for water-tube boilers).

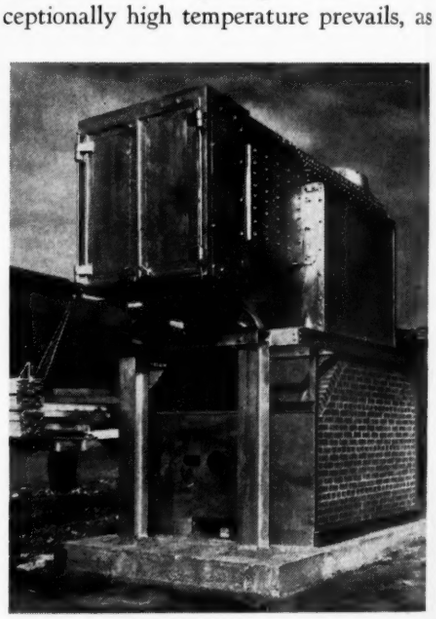
In general, the shape of the firebox must conform to the shape of the boiler. If a boiler is built with a long, narrow grate (for coal firing), the resultant firebox for oil will assume the same proportions, as it will also be true that boilers having short, wide grates will have the same proportions of oilburner firebox. Stated otherwise, the dealer ordinarily can control only the height of the firebox. In most cases, it should be possible to make the flame conform to the general proportions of the boiler design. There are a few exceptions, which will be discussed below.

The firebox design must incorporate provision for introduction of secondary air. Usual practice is to construct the floor hollow at the center, with ports to admit air into the chamber from an air lane under the firebox floor. This so-called checkered floor is not essential; good results can also be obtained by having the secondary air enter the chamber through an air port in the front wall, under the burner nozzle. The checkered floor requires additional clearance under the boiler, beyond that needed to provide the calculated combustion volume. Experience shows that the secondary air port in the boiler front, whether checkered floor or direct air port be used, should be designed on the basis of 1 sq. in. of free area per 32,000 Btu heat release, which is equivalent to 1.1 sq. in. per 100 sq. ft. EDR, 1.5 sq. in. per bhp, or 4.6 sq. in. per gallon oil burned per hr.

A proper understanding of combustion chamber construction requires some knowledge of refractory materials. While a considerable amount of physics and chemistry would be involved in any attempt to present a technical discussion of refractories, it is still possible to classify these materials as to their applications and use without becoming highly technical. It will suit the purposes of this article to consider refractories in the following groups:

- Standard firebrick
  - Intermediate heat duty
  - High heat duty
  - Super duty
- Bonding cement, air setting
- Plastic firebrick
  - High heat duty
  - Super duty
- Castable refractory
  - Standard density
  - Light density
- Insulation
  - Insulating firebrick
  - Insulating brick
  - Block insulation
  - Bulk insulation

Intermediate heat duty firebrick, having a fusion temperature around 3000 deg. F., is seldom used in industrial burner work, except as a backing behind higher grade brick. First quality firebrick is the one most generally used for the firebox of an industrial oilburner, and serves very well in most cases. It has a fusion temperature about 3100 deg., and excellent resistance to spalling. Where an exceptionally high temperature prevails, as in a dutch oven, the choice of super duty firebrick, with a fusion temperature close to 3200 deg., would be wise. All three grades are available in the standard size called the nine-inch straight: 2½ x 4½ x 9 in., as well as in the special shapes and sizes that are found convenient by the mason.



**Firebox Boiler** *rear-fired is set on high base and firebox is extended backward with suspended flat arch.*

The bonding agent is just as important as the firebrick. Most failures in firebrick surfaces occur at the joints; the use of a high grade mortar will prolong the life of the joint and therefore of the entire firebrick wall. Although there are a variety of mortars for firebrick, including heat setting, air setting, dry type, wet type, present practice in moderate sized

operations is to favor the wet type, air setting high temperature cement. This material is shipped in steel containers as a paste or cream, mixed with about the right amount of water, although sometimes a small percentage of water is to be added before use and thoroughly stirred into the mix. The proper consistency for use is a thick cream in which a firebrick will partially submerge but not completely sink.

Firebrick should always be laid by dipping the brick in the prepared cement and then laying it into its place in the wall; trowelled joints are not desirable in firebrick construction. The cement penetrates into the pores of the two brick surfaces, above and below the joint, and in a short time sets to form a firm bond, without benefit of heat. A thin joint between brick is quite important, so most masons tap the brick with a hammer, forcing it firmly against the adjacent brick and the one below it.

Recent years have seen a heavy increase in the use of plastic firebrick. This is an unburned refractory material consisting of ground fireclay grog, raw fireclay and water. Grog is a calcined (heated) nonplastic clay which gives the mixture volume constancy at high temperature. Upon being heated, plastic bakes into a single, continuous, jointless firebrick shape. This type of refractory construction has many advantages over standard firebrick. There being no joints, the weakest spot of firebrick walls is eliminated. The special curves and contours necessitated by peculiar boiler shapes, nozzle ports, observation openings, etc., can easily be handled because of the ease of moulding the plastic to any desired shape. Plastic firebrick is offered in two grades, corresponding to the standard firebrick grades of first quality and superduty.

Plastic should be used only in those portions of a firebrick wall that will become hot enough to cause vitrification or baking of the material to its final and permanent condition. Usually, plastic is not applied in thicknesses exceeding 9 in. or less than 3 in. Inclined surfaces and arches may be suspended by means of steel hangers, which greatly facilitates construction and strengthens the finished structure, at the same time allowing of movement from expansion and contraction, and the hangers are attached to anchors by means of movable joints.

Plastic refractory walls should be built up, in vertical walls, by applying it in shallow layers, about 3 in. thick, and pounding it downward with a steel hammer weighing about 2 lb. and having a 2.5 sq. in. surface. For vertical walls, these horizontal layers are superimposed one upon the other to build up the wall. The outer or exposed face is then trimmed with a spade or other straight edge tool to a smooth surface, and finally vertical and horizontal slits, about 1½ in. deep, are cut into the wall midway between hangers. As the wall heats for the first time under fire, loss of moisture causes contraction, the plastic divides at the slits to form permanent joints between large rectangular surfaces of plastic wall.

**Water Tube boiler** *with plastic refractory firebox walls and firebrick floor. Walls have expansion slots horizontally and vertically.*

### Castable Refractory Types

Castable refractory is generally known in the industry as hearth cement. It is a preparation sold as a dry powder to be mixed with water just prior to use; the mixture is then poured into place. This material is made of finely ground grog, calcined fireclay and a binder such as refractory portland cement. It is used in such applications as the horizontal hearths of vertical rotary oilburners. Hearth cement should be allowed 24 hrs. drying time before being fired. A lightweight castable refractory is made of the same ingredients, but to the mix is added some type of organic material which is later destroyed by heating the dry mix. The voids thus created are preserved in subsequent mixing with water, and make the finished hearth porous. The pores reduce the heat conductivity, which is to say, increase the insulating quality.

Insulating firebrick are made in a process analagous to that for insulating hearth cement. Standard firebrick clays are mixed with organic material which is later expelled by heat, imparting high porous structure to the firebrick. These brick may be exposed directly to the fire, but more generally are used as a backing up layer behind standard firebrick, to reduce the heat transmission. Insulating firebrick are made in a number of grades, designated by the maximum temperature to which they should be exposed, as 2000 deg. or 2200 deg., etc.

Another form of insulating material, suitable for backing up firebrick walls, is a fibrous sheet, made in thicknesses of 1, 2, and 3 in., 6 in. wide by 24 in. long. This insulation cannot be exposed to fire,

(Continued on page 141)

# Jet-Heet Furnace

## Small Size Unit Develops High Efficiencies Through Jet Principle

by
Calvin MacCracken*

IN AN ATTEMPT to overcome some of the limitations of present-day automatic heating systems, a new type of domestic furnace has been developed, getting the benefit of wartime research on jet propulsion engines and aircraft heating. This has been named "Jet-Heet."

Jet-Heet is a forced warm air, oil-burning, integral furnace-burner unit, equipped with humidifier and air filter. It has a high pressure atomizing burner with a tiny 2½ inch diameter by 5 inch long stainless steel combustion chamber in which the fuel is completely burned without audible combustion noise by properly-controlled turbulent mixing of the air and fuel.

One fan is used for both combustion air and circulating air. A relatively high air pressure (see Fig. 1) is generated by the fan in order to make possible four design features:

1. The use of a small, turbulent-flow combustion Chamber.
2. High velocities in the heat exchanger for smaller size and greater efficiency.
3. Elimination of the need of chimney draft.
4. The distribution of air at high velocities through small tubes to specially designed registers in various rooms.

### Combustion

A considerable excess of air is used in the combustion, the $CO_2$ content being around 7%. This is done mainly to keep metal temperatures low and insure long life of parts, no refractory lining of any kind being used. As a result, the combustion is smokeless and completely free of CO.

An automotive type spark plug provides the ignition. The tiny combustion volume makes it impossible for explosive pressures to be built up in the event of delayed ignition.

Catalytically cracked fueloil and standard fueloils as heavy as No. 5 can be readily burned in the combustion chamber. No. 5, however, is not recommended due to other considerations. The combustion chamber is easily adapted to the burning of manufactured or natural gas and it is planned in the future to offer the customer his choice of either oil or gas with the same unit.

The combustion gases are cooled to as low as 140° F. in the heat exchanger and then are expelled through a 2" diameter copper exhaust tube. Condensate does not collect in the unit or exhaust tube due to the velocity of the gases which carry the water off as a fine mist. Efficiencies of 93% to 95% are thereby obtained.

Because of the forced exhaust system, down drafts and blow back are eliminated and thereby most of the cause of odor and dirt from any oil furnace.

### Distribution to Rooms

The circulating air on entering the unit passes through a glass fibre throw-away filter. It then encircles the entire inner unit, acting as a thermal insulator as it passes to the blower end. On leaving the blower it spirals through a counter-flow, constant velocity, stainless steel heat exchanger and emerges at a temperature between 250 and 350° F. The air is then humidified by a float-controlled pan, the adjustable level of the float determining the surface area of the water.

What is subsequently done to the air depends on whether standard sheet metal supply and return ducts are to be used or whether the new Jet-Heet distribution system is installed. In the case of the standard ducts, the air then passes through the nozzle of a simple injector aspirating filtered air from the space between the inner unit and outer case. The circulating air is thus increased in volume and cooled down to a normal bonnet temperature and is distributed and returned in the conventional manner.

If the Jet-Heet system is used, the air passes directly at high temperature and sufficient pressure into 2" diameter insulated tubes made either of metal or of glass fibre bonded with rubber. This extremely flexible glass tubing was used extensively on aircraft heating ducts such as in the B-29. Tubes of this kind can be pulled up between the two-by-fours in partitions of existing homes and connected to the special registers. On new building also the cost of installation with these ducts will be greatly reduced.

Just before the air in the tubes reaches the room, air from the room is aspirated in and remixed with the supply air, cooling it down from 300° to 150° F. and slowing it down from 1500 to 300 ft. per minute so that it issues into the room quietly and gently. In effect each room has its own "return air" system so that return ducts are not needed. Fresh air can constantly be added to the room without any more loss of heat than is usual in standard arrangements.

### Special Features

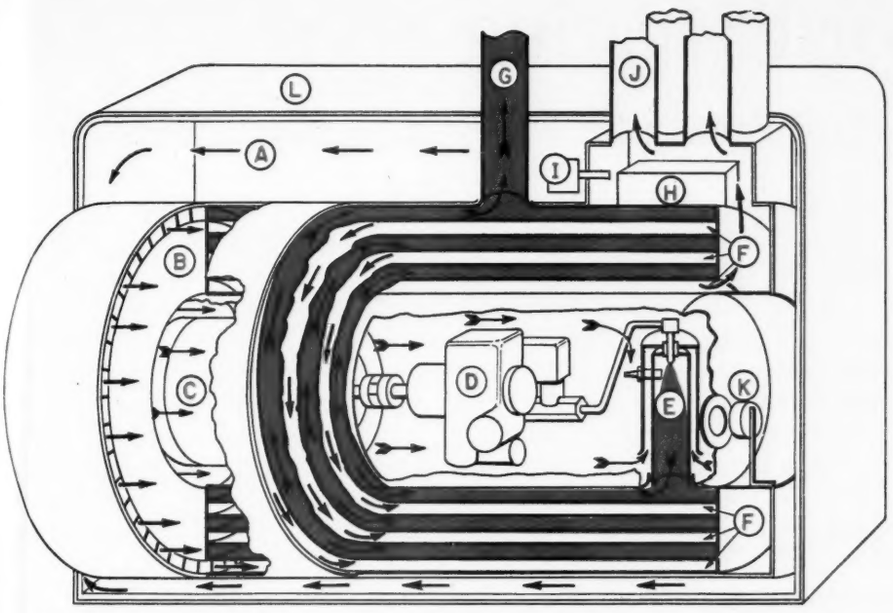
The new electronic eye safety control is used to give maximum protection and quick response. Since there are no castings or heavy sections in the unit which would absorb heat, the response to the thermostat's call for heat is but a matter of seconds. A time delay relay for scavenging purposes allows the fan to run a short time after the fire is extinguished by the closing of an electric oil valve. This compensates for the normal scavenging draft of a hot chimney after shut down.

Serviceability is made easy by "quick-disconnect" clamps. One man can completely disassemble the unit in five minutes.

Jet-Heet will be made in two capacities, the only difference being in the motor and fuel nozzle. With a 1/3 H.P. motor at 1725 rpm, the fuel consumption will be about ½ gallon per hour with an output of 65,000 Btu. per hour. At 3450 rpm a 1 H.P. motor is needed and the fuel flow and output are doubled.

A powdered metal oil filter is used to solve the problem of clogging of the small nozzles. Developed for the diesel engine and used to protect small orifices in jet

*Vice-president, Kerns & MacCracken Corp., 236 West 55th St., New York, and inventor of the unit. It was described in a recent issue of *Life* magazine, resulting in a number of inquiries to FUELOIL & OIL HEAT for details.




**DIAGRAMMATIC DRAWING OF THE JET-HEET FURNACE**

**A-Air, drawn into unit by Blower, has been cleaned by filters (not shown).**

**B-Blower. Blows air (shown by ⟿) into Combustion Chamber. Also blows air for heating house (shown by ➔) direct into Heat Exchanger.**

**C & D-Motor and fuel pump.**

**E-Combustion Chamber. Filtered oil is atomized by high pressure atomizer and mixed with air for complete combustion. Spark plug provides initial ignition.**

**F-Heat Exchanger. A 2½-turn spiral through whose alternate layers (shown here in cross-section) flow combustion gases (red) and air which heats house. Gases lose 95% of their heat to "house air" before being expelled through small exhaust, G.**

**"House air" flows from Heat Exchanger to Humidifier.**

**H-Humidifier. Has control for varying the humidity.**

**I-High Limit Control. Prevents overheating of air.**

**J-Outlets which can be connected to any type of ducts to carry warm air throughout house.**

**K-Electric Eye. Instantaneously stops oil flow if flame accidentally goes out or mixture is not ignited on starting.**

**L-Steel jacket, finished in baked white enamel.**

propulsion engine fuel nozzles, it performs far better and costs less than standard mesh filters.

Jet-Heet, with its attractive white enamel case, small size (35" long, 23" wide, 22" high) light weight and adaptability, should open up more new applications and types of installation than have been previously possible.

◈

*Clarence S. Beesemyer,* vice president of the General Petroleum Corporation, has been elected president of the Los Angeles Chamber of Commerce for 1947, it is announced by the chamber's directorate.

## Simplify Housing Priorities

IN A MOVE to simplify the priority system for housing materials, the Civilian Production Administration and the Office of the Housing Expediter announced that after January 1, 1947, building materials dealers no longer would be required to "set-aside" specified quantities of scarce items and hold them for sale to fill only priority orders. Dealers, however, still are required to honor outstanding priorities as they are presented.

Revocation of CPA's "set-aside" requirements was accomplished by amendment of Schedule B of Priorities Regulation 33, the regulation controlling distributors' handling of HH and other rated orders for most of the building materials listed in Schedule A of PR-33. It does not apply to lumber or lumber products, which are controlled by other orders.

Suppliers still must give preference to rated orders, up to a ceiling of 75% of their monthly deliveries of the items involved, but need not hold stocks in anticipation of such orders, CPA said.

◈

## NHA Shows Total Units Authorized Under Priorities

FINAL TABULATION of HH priorities on new permanent houses and apartments under the Veterans Emergency Housing Program, made public by the National Housing Agency, shows that 927,621 units were authorized in 404,040 applications for the period between January 15 and December 23, 1946.

Issuances of HH priorities terminated on December 23, 1946 when a new building permit plan was instituted. HH priorities issued prior to the new plan remain valid, however, and their attendant obligations, including price maximums, continue in force. The total figures are exclusive of agricultural and temporary re-use housing units, as well as conversions.

Of the total authorizations, 23.8 percent were rental units and 82.5 percent were sales units. Some units were reported both as rentals and sales and therefore appear in both classifications.

A sectional breakdown of HH priorities shows the Pacific Coast states leading with a total of 195,241 units. Other sectional totals are: East North Central States, 166,939; Middle Atlantic States, 144,198; New England States, 29,808; West North Central States, 57,127; South Atlantic States, 133,968; East South Central States, 54,452; West South Central States, 97,238; Mountain States, 43,264; and the Territories, 5,386.

◈

*Thomas J. O'Rourke* has been appointed vice president in charge of sales of American Lubricants, Inc., it was announced by President Paul E. Fitzpatrick. Mr. O'Rourke joined American Lubricants in Buffalo as general sales manager in 1945. Mr. Fitzpatrick also announced increased sales volume in domestic oil-burners and fueloil.

# A Record Heating Show

## Lavish Product Display, But Little Sales or Buying Pressure

THE FIVE DAY International Heating Exposition that ended January 31 at Cleveland's Lakeside Hall set a new attendance record, about 40% above the last Cleveland show in 1940, and in other ways was the most impressive heating show ever held, yet during the week there was a definite low pressure feeling throughout the hall. Total attendance was about 28,000 compared to 20,600 in 1940, all supposed to be industry people rather than the public, although exhibitors believed generally that a fourth to a third was general public.

Even if so, the remainder represented a very impressive gathering of heating dealers, manufacturers and distributors. But many of them were inclined to visit instead of seriously studying product. True, a great deal of the visiting was done with manufacturers, and the industry relations value in such contacts is not to be lightly dismissed, but it was quite noticeable that most of the visiting was done at the edge of the aisles, leaning on a boiler or furnace, less of it back in the booth over a folder or price schedule.

One prominent boiler manufacturer summed it up, "Sure, we're just exposing our boilers and ourselves to our friends, renewing some acquaintances . . . we're not making any actual deals, but we did get a line on two good field men that we probably would have missed if we hadn't been here. Fact is, we do have some boilers for immediate delivery but we're not shouting about it."

Down an adjacent aisle, however, there was some attempt by a small exhibitor to sell things right now. He had an attractive young lady standing practically in the middle of the aisle, waving little folders under people's noses, and explaining, "Oil or gas burners, immediate delivery, all you want." The gasburners were made in Detroit but she wouldn't say whence the oilburners. Some of the opportunists in this industry (or temporarily so) are going to be left with a hayloft full of burners some of these days . . . that cost a fortune to assemble . . . with transformers, "all you want for $45."

The Show came at a kind of in-between period, when manufacturers were not too anxious to sell and dealers willing to mark time to see how the wind shifts before buying beyond their daily needs. Naturally, we're not thinking of such products as would be useful in the small home program . . . they're always too short . . . but on items that normally and principally interest the oilheating industry many dealers are caught up with backlogs and expect to start into their 1947 selling drives with changed products that they hope will soon be ready.

In other words, dealers have been told by manufacturers ever since the war ended that new product was being held back by the necessity to concentrate on getting out old models, but painted blue this season. The obvious reasoning was that to give dealers anything quickly was far better than waiting months for retooling. Let the retooling wait, let the new models wait, until it was time to start selling drives and then they would have something fresh and be able to leap ahead of competition.

The dealers are ready for those now, and the manufacturers are just starting to get time to retool. 1947 will probably see more fresh product development and new product announcement than any previous year in the industry's history. The oilheating exposition to be held in Chicago in April 1948 can be looked on as the first big real postwar show, in which the brilliant engineers who so distinguished themselves on war work will at last have had a chance to display that same brain-power on civilian product. The Cleveland show was a bit too early to catch that, as was the Philadelphia oilheating show last spring.

There were new products, of course, as John Schulz points out in his article in this issue . . . some of them noteworthy advances . . . but they were few among so many hundred booths. Such booths had had a big play, but even there, folks were more pleased than excited. Heating men at all levels are prosperous . . . prosperous and tired. But wait until next year.

It was interesting to check the comparative strength of the various heating fuels, as reflected in the number of manufacturers displaying equipment to burn them. Oilheating, as would be expected, was decidedly in the lead, but gas equipment made a strong showing. Stokers were weak. All told, 56 manufacturers showed oilheating equipment in their booths, 42 manufacturers showed gas heating equipment, including the American Gas Assn. display, 16 manufacturers showed stokers. Quite a number of manufacturers offered more than one kind of automatic firing equipment, with 17 having both oil and gas, two having oilburners and stokers, and eight showing no partiality whatever and displaying all three kinds. Those with oilheating exclusively numbered 29, those with gas heating exclusively were 17, and stokers exclusively six manufacturers.

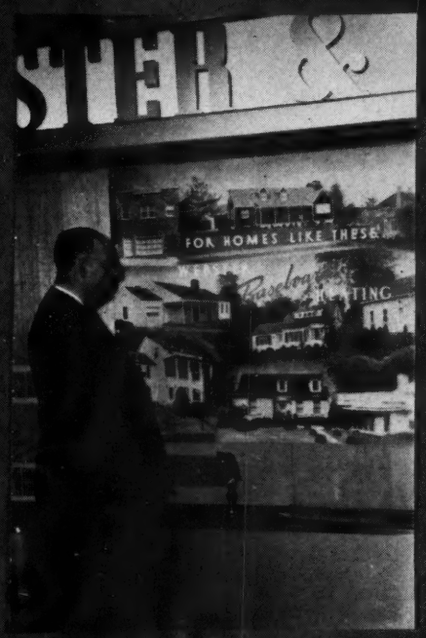
So, clearly, oil had the strength, particularly when you add the dozens of oilheating accessory manufacturers, like pumps, transformers, nozzles, electrodes, combustion chmabers, and other items peculiar to oilheating . . . items not matched by any similar requirements for gas or stoker heating.

It was very noticeable to anyone who has attended previous expositions that the stoker manufacturers are moving pretty rapidly into the oilheating camp. Among the 16 stoker brands shown, ten were by companies that also make oilburners, and most of those companies came into oilheating since the war ended. Some of them are strong companies and may well make contributions to oilheating progress.

The pictures convey the flavor, rather than detail of the show. The impressive gentleman looking at the homes much too small for him is Ted Rowland, president of Elliott-Lewis, Philadelphia. The threesome, "Quiet—Precision Built" looks like Alexis Doster of Torrington, Bill Kemp of Sundstrand and Henry Brody of Automatic Heating, Boston. The young lady in the FUELOIL & OIL HEAT booth is Alice Enright. The two girls in the Rheem Mfg. Co. booth (on the cover) are unknown but probably won't be for long.

JET-HEE

INDUSTRIES, INC.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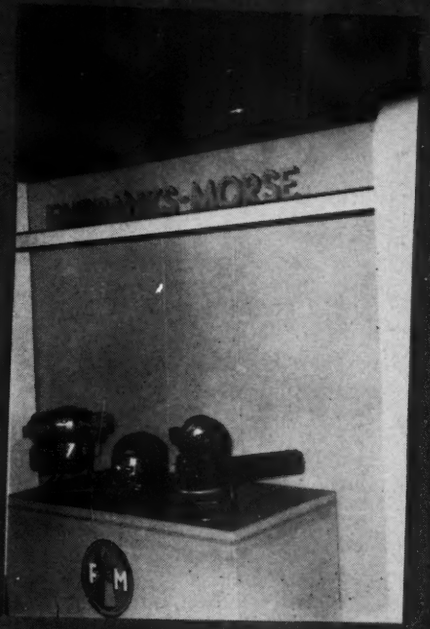
FOR HOMES LIKE THESE


S-MORSE

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fuel oil heat

# Panel Heat and Research Fill Convention Sessions

CONVENTION SESSIONS of the American Society of Heating & Ventilating Engineers and the National Warm Air Heating and Air Conditioning Association filled the middle of Show Week at Cleveland while product-minded visitors wrestled with the crowds at the International Heating and Ventilating Exposition. The congestion was little less at the Statler or at the Cleveland hotels where the two associations held their sessions. Crowds filled the lobbies and jammed the sessions as the associations reported on their activities and tried to sell the gospel of better heating.

The high spot of interest in the ASHVE program was a forum on panel and radiant heating Tuesday afternoon, January 28. Five short papers were followed by lively discussion.

H. H. Angus, Toronto, defined a fine difference between panel heating and radiant heating, following which Carl F. Boester, Lafayette, Ind., described the heating mediums that are used for this type of heating.

C. E. A. Winslow, New Haven, Conn., defined the measure of comfort in panel heated rooms as the mean between the air temperature in the room and the average temperature of the surrounding surfaces. For human comfort, Dr. Winslow said, this mean temperature should be at least 68° F. For a person to be comfortable in 50° air, according to Dr. Winslow's findings, it would be necessary for the average temperature of the walls, floor and ceiling of a room to be at least 86° to counteract the effect of the cool air.

W. Bruce Morrison, Portland, Ore., reported a saving in fuel when panel or radiant heating is used, though the fuel saving is believed to be small. R. L. Byers, Cleveland, discussed control requirements for radiant type systems.

The session brought out that radiant heating buildings should be constructed with proper balance to make the systems responsive to temperature changes. Further discussion of the response and lag in the control of panel heating systems was presented by F. W. Hutchinson at the Thursday morning meeting.

ASHVE technical sessions and inspection trips were held from Monday through Thursday concluding with a joint session with the National Warm Air Heating and Air Conditioning Association.

Members of the warm air group re-elected Frank E. Mehrings, Peoria, Ill., president for another year at their meeting, and confined the convention sessions to Wednesday and Thursday.

In his opening report, Mr. Mehrings predicted that the industry would install 1,250,000 systems this year, against the 700,000 systems that were installed in 1946. He pointed out that the warm air industry was producing at capacity during the last three months of 1946, and there is every reason to believe that this rate will be maintained this year. He set the dollar volume of the industry at $500,000,000 in 1947. George Boeddener, managing director, estimated that the industry would not drop below a million units a year for at least five years, and probably longer.

Frank L. Meyer, chairman of the Research Advisory Committee, reported that the new research residence at the University of Illinois probably will be completed about March 1, and tests, probably on warm air panel heating, will start at once.

At a luncheon meeting, Prof. A. P. Kratz, was honored for his long service to the association as director of its research program at the University of Illinois. Prof. Kratz was retired after 40 years at the University, and was instrumental in getting the association's research program under way in 1918. He was presented with a plaque in appreciation of his long and valuable service to the warm air heating industry.

High on the association's program for the year is a series of "Indoor Comfort Conferences" to acquaint dealers and their men with proper procedure for figuring, installing and servicing warm air equipment. Elmer Sylvester, vice-president of Florez, Inc., Detroit, introduced the program which is to be carried out in the series of two-day meetings. Visual air sound slide films will be used to speed the presentation by Guy A. Voorhees, application engineering director of the association, who will conduct the conferences.

In addition to the technical help in making more successful installations, a new and impressive series of selling helps and dealer aids have been planned and now are available or in production. These sales helps are built around the Indoor Comfort emblem which is being made available to the membership on decals, illuminated signs and in literature. A consumer advertising campaign is planned to sell the emblem to the public.

This publicity program was presented by E. R. Preble, vice-president of Griswold-Eshleman Co., Cleveland. He also showed advance copies of a new booklet, "Seven Keys to Indoor Comfort" which will be widely distributed to builders, home planners, and others of the public who are in position to buy or influence the purchase of heating equipment.

The booklet, attractively done in color, lists and explains the seven keys: Satisfactory temperature, proper humidity, air movement, freedom from dust, freedom from staleness, freedom from germs and bacteria, and adequate air density. These subjects are explained individually and fully discussed in the booklet.

Prof. L. G. Miller of Michigan State announced plans for the annual "Short Course" in warm air heating to be held at the college in East Lansing, Mich., the week of March 24. He urged members of the industry who plan to attend to make early reservations for living space.

Book 7 of the codes, covering forced warm air calculation and installation, is being broken down into two separate codes, since experience has shown that the book as written was not entirely satisfactory for the design and installation of warm air systems in very small homes. In the revision, one book will cover systems of 100,000 Btu and larger, and the other will deal only with the calculation, design and installation of warm air systems with capacity less than 100,000 Btu.

At the joint session held with ASHVE on Thursday afternoon, Prof. S. Konzo, who now is in charge of research for the warm air group, presented a paper on design of large mechanical warm air systems, and Matthew Luckiesh and A. H. Taylor of ASHVE covered Bacterial Air Sampling.

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# Youth Essay on Oilheating That Won Ass'n Contest

*The Westchester (N. Y.) Oil Trade Assn. recently awarded 15 prizes to high-school youths of the County for excellence in essays on the subject, "Contributions of Fueloil to Better Living." Judged best of the several hundred submitted was this one by Beatrice Bergmann. . . .*

THE WEATHER WAS cold outside, and Jack Frost was frolicking to and fro, painting noses blue and cheeks red. In our house it was snug and comfortable because we heat with oil.

My sister and I looked out of the window and watched the Smiths receiving coal. The coal men tramped across the lawn to an open cellar window through which they dumped the rattling coal. Some of the lumps bounced against the white window frame, smudging it. I wondered how grimy the cellar would get from the coal dust.

In front of our house, an oil truck was pumping oil into the receptacle near the curb, and I felt proud that we burned oil, as I compared the methods of delivering the two types of fuel.

Across the street, Mr. Jones came out of his house carrying a heavy can of ashes. Staggering to the edge of the sidewalk, he let it drop. A cloud of dust enveloped him, and he quickly stepped back and brushed off his clothes.

"I'm glad we changed to oil," said Sis, "because we'd have to carry out the ashes while Mom and Dad are away in Chicago."

"That's not all," I added. "We'd be tending the furnace, too."

"The cellar sure gets dusty when you clean out ashes," mused Sis.

"Remember how mother complained that the dust came right up through the floor and settled on the drapes when father shook the grate?" I asked.

"Here comes Mary," announced Sis, as she let my girl friend in the front door.

After exchanging greetings, I said to Mary, "We were watching them deliver your coal. It seems terribly messy."

Mary countered by saying, "It may be dirtier than oil, but it's cheaper."

"Oh no," I protested, "father said that oil heat costs less than coal because it's controlled heat and therefore less wasteful."

"What is controlled heat?" asked Mary.

"There are automatic controls on our oilburner which starts it when the room temperature goes below 72 degrees, and turns it off after it exceeds that temperature. Another thing, we have hot water instantly, night and day, since we replaced our old hot water coal heater."

Changing the subject, Mary said, "I came over to play ping-pong."

We went down into the cellar which father had converted into a rumpus room after the oilburner was installed. It had panelled walls, comfortable chairs, and a ping-pong table. Since we had a nice place to play on dreary days, we had become quite popular with the "kids" in the neighborhood.

Pointing to a door which was lettered, "WARNING — Knock Before Entering," Mary asked, "What's in there?" Opening it, I let her look in. Father had converted the old coal bin into a photographic darkroom.

After finishing our game, we sat down to rest. Mary looked wistfully at our oilburner and said, "I wish Dad would install oil. It sure makes for better living."

"Better living!" I exclaimed, "Why it's the best!"



## Radiant Heating Data Combined In One Book

RADIANT HEATING, a practical book on the design and installation of radiant (or panel) heating and cooling, and snow and ice melting, has been written by T. Napier Adlam, vice-president and general manager of Sarco Mfg. Co., New York, and published by Industrial Press. The book is practical in its approach, covering design, installation and control of hot water, steam, warm air and electric radiant systems for buildings.

Intended for engineers, contractors, architects, builders and others concerned with building heating and snow melting for walls, driveways or airports, "Radiant Heating" is primarily a working manual on the subjects. Included among the 309 illustrations are 64 full page charts for determining pipe size and spacing for as many types of floor and ceiling construction. Data resulting from the author's own tests on effect of floor coverings are also included. Formulas have been reduced to the simplest terms consistent with sufficient accuracy to meet practical requirements, and simple easy-to-use charts give most of the essential design data without calculation. Exact step-by-step procedure in designing and installing radiant heating systems is summarized.

Chapters include those on theory of heat radiation, artificial heating as related to bodily heat losses, measurement of comfort, determining mean radiant temperature, temperature studies in radiant heated rooms, radiant heating with ceiling panels, radiant heating with floor panels, use of wall panels, metal panels, and electricity, air venting and flow adjusting, controls for radiant heating, areas and surface temperatures of radiant heat panels, determining panel type size, spacing and heat input, radiant cooling and air conditioning, snow melting by embedded pipes, and step-by-step procedure in radiant heating design.

Radiant Heating is bound in imitation leather, is 6 x 9 inches in size, and contains 472 pages. Published by Industrial Press, New York, it is priced at $6.00.

*Ward Halbert,* well known for his reporting and analysis in the oil business, is dead following an illness diagnosed as lymphatic leukemia. Mr. Halbert was a member of the staff of several oil industry publications during his career, and resigned from the staff of Fueloil Journal in the fall of 1941 to become assistant to George S. Benson, president of Harding College.

*Leonard E. Matzner* has been appointed advertising manager for Mack Mfg. Corp., New York. He had been serving the truck manufacturing concern as assistant advertising manager since his return from active duty in the Pacific.

*H. E. Beane* has been appointed general sales manager of The Bristol Company, Waterbury, Conn., according to Howard H. Bristol, President.

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**Following are features that are behind their fine performance:**

Mica insulation on high voltage coils does not lose efficiency with age or high temperatures.

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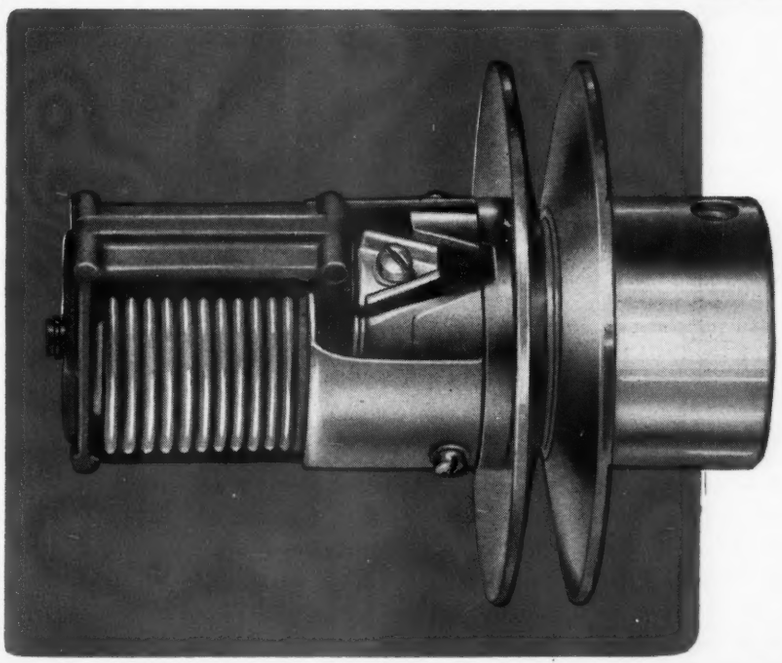
The built-in regulation insures ignition of cold oil, even when line voltages are low.

The metal shield reduces radio interference to a minimum.

By comparison—point for point—you'll find Webster Electric Ignition Transformers tops in performance.



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A sample of warm air is continuously taken from the bonnet through a control duct and discharged over a thermostatic bellows, which in turn actuates a sliding sheave. This changes the pulley's effective diameter and results in the increased or decreased speed of warm air flow.

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# Oil Burners Dominate Cleveland Show

## Exhibitors Emphasize Time-Tested Heating Equipment

by
J. W. Schulz

THE TYPICAL oilheat enthusiast who traveled to Cleveland for the Seventh International Heating and Ventilating Exposition, Jan. 27th to 31st, was more interested in getting facts on production schedules than in learning of new products. Yet the equipment on display was clustered with technical-minded admirers. Domestic automatic firing equipment predominated. Coal stokers were not as numerous as might have been expected; a surprising number of gas conversion burners and gas-fired furnaces and boilers appeared; oilheating turned out to be the favorite as usual with about every other booth boasting an oilburner or something closely related to oilheat.

Startling changes to existing equipment models are not being chanced this year by many of the well-established manufacturers in the oilheating field. Since quiet, dependable, efficient and trouble-free operation has been gained by these manufacturers, striking design changes are not in order today. That is the explanation given by manufacturer after manufacturer whose booth at the show contained equipment which oilheating experts already know down to the smallest detail. Several of the leading equipment manufacturers who still follow the same design bents they have pursued for five to fifteen years are concentrating on rounding out their lines to include at least three or four models each of oilburners, oil furnaces of the winter air conditioning type, and oil boilers. At the same time, of course, small changes are being made to arrive at improved appearance, easier installation and service, quieter operation, lower oil consumption, and other advantages.

More highly efficient operation on the post-war fueloils is a distinct objective of more than a few manufacturers of oilheating equipment, and the models on display at the show gave evidence of this. For example, the efficiency of Duo-Therm winter air conditioning furnaces is said to be higher because carefully engineered changes have been made to the vaporizing burner. Toridheet declares that it has developed a new design for the distributor of its wall flame burners, which gives better oil "strike"; improved ignition on cold starts is a reported advantage. Also, the Toridheet gun burners on display showed something very unusual in the form of the air-handling parts at the ends of the gun tubes. The new gun-type Preferred Utilities burner has a pressure nozzle much farther inside the gun tube than is usual practice; a cylinder with dozens of air holes directs high-speed jets of air into the oil spray from the nozzle, and combustion is started well within the gun tube. The result is said to be closely-controlled combustion quality with $CO_2$ readings up to 13% on actual installations. The HomEase pressure burner has added something to its claim of exceptionally high $CO_2$ with all flame shapes from extremely long and narrow to extremely short and wide; now the Firestat is used to avoid smoke and soot and resulting waste of fuel on cold starts, and to tune the burner automatically for peak practical $CO_2$ as the chimney and firebox reach normal operating temperatures. The claim is that the $CO_2$ reading of a typical installation can be between 9% and 11% for cold starts and short "on" periods, whereas after about four or six minutes of burner operation a test will show perhaps 12% to 13% $CO_2$.

Timken declares that as the result of a number of improvements of a technical nature, its burners and units simply "run better longer." Another Timken boast is of small boilers well-engineered for lightest heating loads of the smallest, well-insulated homes. The OBD-50 oil boiler fires one-half gph as maximum, is powered by a 1/100 hp burner motor, has unique mechanical-type safety controls instead of the usual stack control. The OBA-65 boiler fires seven-tenths gph maximum; Timken's new idea is to use two of these boilers in tandem for heating medium to larger size homes.

Also for small homes, Fitzgibbons' exhibit included a new model Directaire winter air conditioning furnace, sized for 1.0 gph and having different flue passages than were used in earlier models of the Directaire. The well-known Fitzgibbons 400 Series oil boiler naturally was very much on display in addition.

Visits to several booths showed that the advocates of vaporizing burners are firmer than ever in their conviction that they have solved the problem of heating the smallest homes which need fire sizes considerably lower than one gallon-per-hour. The Miller Company featured the vaporizing-type, mechanical-draft conversion burner in which it has specialized for six years, and pointed with pride to a maximum firing rate of nine-tenths gph and Underwriters' listing for Nos. 1, 2, and 3 fuel oils. Designed expressly for small homes, they conclude.

The Quaker Manufacturing Company, long well-known as a leading manufacturer of equipment powered by vaporizing burners, had new vaporizing conversion burners at the show, seemingly painstakingly designed for good combustion, in two models for .70 and 1.0 gph maximums. A small blower motor runs continuously, giving the oil flame a small amount of air when the burner is on oil pilot operation and about eight times more air for the high flame. Through use of an exclusive Quaker-developed control action, extra air is given the flame when the burner shifts from high fire to pilot fire, to make certain of burning clean the high-rate oil which is in the burner at the end of the high-fire period.

Another old-timer in the field of vaporizing burner equipment, The Coleman Company, featured its brand new highboy type winter air conditioning furnace; also in the booth were water heaters, floor furnaces, and space heaters fired by vaporizing burners. Again the claim is that this type of equipment solves nicely the problem of oilheating the smallest homes.

Duo-Therm showed its complete line of vaporizing burner equipment, including winter air conditioner type furnaces, space heaters, and water heaters. The

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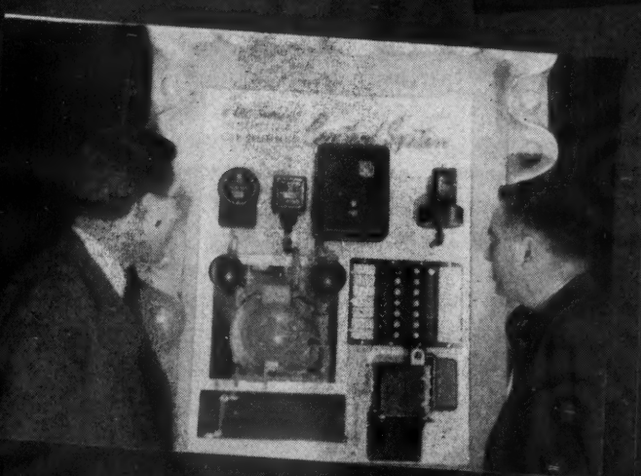


ENTURY

water heaters have a new feature; they are now obtainable with integral oil tanks which simplify installation work. This is an optional feature. Power-Air blowers to circulate the air have been used for years on Duo-Therm space heaters, but improved comfort characteristics are said to be the result now of turning these off and on automatically by a brand-new thermostatic control. Set for low heat, the thermostat runs the Power-Air blower a few minutes, then turns it off for a while. The use of this control eliminates any chances of cool air being circulated in winter. Another new feature, said to be of benefit to a small child playing on the floor, for example, is the "spot heat door." When open, this permits radiant heat to provide intense, direct warmth for anyone close to the heater. The inside surface of the door is a heat reflector. Seemingly the aim is to prevent complaints about a space heater's giving lots of warm air but sending most of it towards the ceiling.

The Superfex line offered by Perfection Stove Company was on display in a generous-size booth which was decorated by large signs about "Homogen Air." Through the presence of 20-gallon replicas of milk bottles, it was understood that "Homogen Air" gives winter air conditioning the same benefits which a given a bottle of milk by the homogenizing process—no different layers. Superfex does the thing by using a three-position room thermostat to control a vaporizing burner which gives a pilot fire, an intermediate size fire, and a high firing rate. Also, a two-speed motor is used for the circulating blower in the winter air conditioner, and the aim is for continuous blower operation on any days when appreciable amounts of heat are needed. On a day when the outside temperature is between 20° and 35°, the oilburner will operate on intermediate size fire most of the time and the blower will operate on low speed most of the time. Occasionally, to keep the room temperature from dropping, the burner might be swung to high flame by the room thermostat and the blower might as a result switch briefly to high speed operation. But at no time will there be an "off" period for the circulating blower, which might invite air stratification.

Superfex featured also something which came as a surprise to those who have always thought of this company as vaporizing-burner-minded; that was its Model 550 "Suspended Furnace." Designed to be hung from ceiling beams, this takes up no floor space, hence is held to be valuable for garages, filling stations, stores, warehouses, etc. The surprise lies in the fact that this unusual unit, which proved very interesting to oilheat enthusiasts because of its unique features and construction, is fired by a pressure burner. A 1/10 hp motor drives the blower and the fuel unit. The rating is for 1.9 gph maximum. One burner dealer commented that four or five of these, quickly installed, might be a good way to heat a large automobile repair shop; each is virtually a self-contained heating plant capable of emitting great amounts of warm air.

The new Superfex High-Boy, Model #194, is rated for .65 maximum gph, and has been designed for easy servicing from the front. The two sides and the back need never be removed for servicing and may be located close to or in contact with the walls of a basement or utility room.

Newly added to the American-Standard line of heating equipment and displayed at the show is the Arcoliner, a new oil boiler in sizes 1.0, 1.25, 1.50, and 1.75 gph. A new flange-mounted pressure burner has been added to the line also, Model FA-A Arcoflame, with a 1/8 hp motor, and of somewhat different design bent than the other Arcoflame burners. The motor and fuel unit shafts are parallel to the gun tube, the motor being located above the gun tube with direct-drive to the fuel unit. The air damper is on the output side of the blower, an innovation for Arcoflame, and the firing end of the gun tube has air-handling parts of new design.

Admirers of the low-pressure principle of atomization again made their headquarters for the most part at the large Williams Oil-O-Matic booth where discussions of the adaptability of low -pressure burners for all kinds of domestic fueloil and very low as well as usual gph rates were helped by technical graphs and diagrams. It is something more than rumor now that important things in the engineering and development departments of Oil-O-Matic have been tested thoroughly; however, the engineering details were not announced.

The Cleaver-Brooks display was of tremendous interest to oilheating technicians who can appreciate the kind of engineering that produces automatic, gun-type burners for No. 5 fueloil.

Harvey-Whipple's booth featured the new Master Kraft pressure burner which proves that not all gun burners look alike, and that you can change the motor, pump, or transformer in two minutes. The Sun-Blaze boiler, which is shipped ready to fire, was also displayed. To complete its line of completely new post-war oilheating equipment, Harvey Whipple has added the Master Kraft warm air conditioner, built in sizes for 1.00, 1.75, and 2.00 gph, and said to give the kind of efficiency and economy that comes of 350° stack temperature with the furnace fired hard enough to produce its rated output.

The Heil Company has added to its line of pressure burners a model for up to 12.5 gph; it has four models of pressure burners, four sizes of boiler-burner units from 1.0 to 3.0 gph, and three furnace-burner units rated at 1.0 to 1.5 gph. New to the Heil line are two winter air conditioners fired by vaporizing burners, both for a maximum firing rate of six-tenths gph. Model VF-1 is for basement installation; Model UF-1 is a high-boy model.

Two oil-burning boilers which are offered with or without integral gun type burners were in the booth of National Radiator, a residential steel boiler, and cast-iron boiler Series 100. National Radiator's pressure burner for up to 1.5 gph was also displayed.

American Stove Company's display concentrated on an oil-fired furnace rated at .63 gph and offered in three models for gravity circulation, circulation given by a blade-type fan, and forced-circulation given by a centrifugal blower.

Prominently and invitingly displayed at the show was the boiler and furnace line of Thatcher Furnace Company, whose 96 years of heating know-how has produced oil-fired models of great interest to newcomers and old-timers in automatic heating. Thatcher proudly talks of a complete line: Oil Master Boilers in six sizes for standing steam radiation loads of 350 to 850 sq. ft.; and Comfort Master winter air conditioners, Model 116 for 1.0 gph, and Model 120 for 1.5 gph.

Fully automatic oil-fired water heaters with vaporizing burners and with tank sizes of 30, 40, and 50 gallons were featured by the Dowagiac Steel Furnace Company, along with winter air conditioning furnaces for 1.0, 1.5, and 2.0 gph.

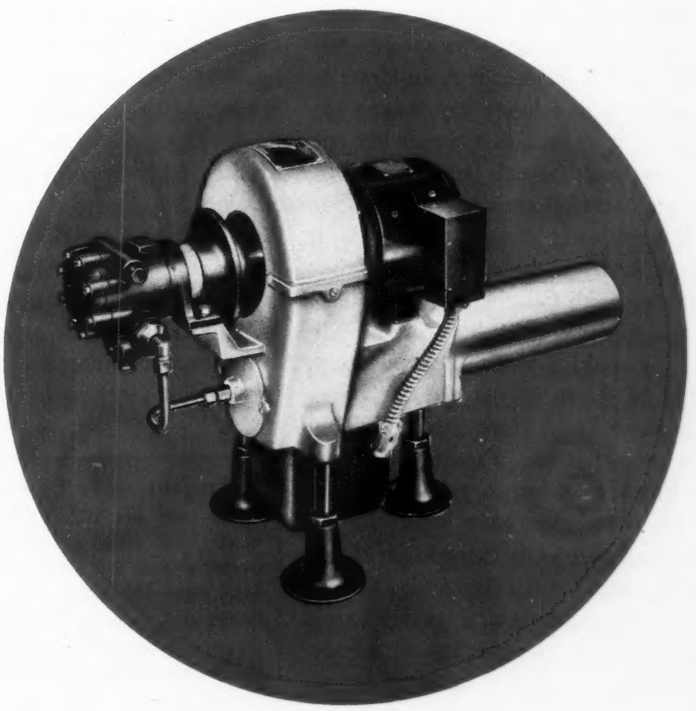
York-Shipley proudly announced that

(*Continued on page 136*)

# IT'S THAT SOMETHING *EXTRA* THAT MAKES THE DIFFERENCE

Today, as always, it takes something *extra* to be outstanding. This is particularly true in the oil burner field, where all burners perform their primary function of producing heat in a similar manner. To be outstanding, to become the leader, a burner must offer something extra! SILENT GLOW'S Air Seel does just that . . . it offers an *extra* at *no extra cost!* A revolutionary adjustable pitch fan prevents cold air from entering the heating plant while the burner is not in operation. This means more efficient home heating at greatly reduced fuel cost. You'll find that this exclusive SILENT GLOW feature is the "extra that makes the difference!"

EMPIRE STATE BUILDING . . . All modern sky-scrapers are high, but only the Empire State Building reaches over 100 stories into the sky.



SILENT GLOW Air Seel . . . All oil burners generate heat, but only the new SILENT GLOW Air Seel *saves* and *conserves* it!

## The SILENT GLOW

**OIL BURNER CORPORATION - HARTFORD, CONN.**

fueloil & oil heat

# Joe Keyhole—With Blinders On!

## (also a muffler)

OH, this aching back! These tired leg muscles! This alcoholic mist before my tired eyes! But the interim Oilheating Show in Cleveland was worth it. They called it the Heating & Ventilating Exposition, but without Oilheating would it have been very much? Chorus from the industry: "NO!" I call it interim, because it was just a taste to keep us interested until *every* exhibitor gets time to prepare brand new stuff for the OHI Show in Chicago in April, 1948.

This is a lovely way to make a living. Look at all the nice things you see and the swell people you meet. Our first encounter was with Ross Sherman, Silent Glow tycoon from Hartford and his marathon driving right-hand man, Ben Lindbergh. Their 1946 production was stupendous . . . ah, flowers that bloom in Cleveland—our next visitor was the lovely Miss Beatrice Hickstein who, incredible as it seems, is an engineer and heads up Newark Boiler Regulator Co. Sam Mirzwyek and Cliff Neben came later . . . busiest early visitors were Otto Moody and Bill White, of Auto-Heat, in NY—always in a hurry but where are they going? . . . back in a corner but not hiding, we found Skuttle humidifiers with Evans and Greulich presiding over Vapoglass Evaporation plates in action.

Norge had our beloved "120" firing in No. 848 with Charlie Davis, Bill Oswald and Geo. Neuman hovering proudly . . . Arnold Eckhart came in from Roselle, N. J., to tell us about his fine new Eckhart-Korth plant . . . and John Morro, the panting Paragon hot-shot from Brooklyn came in with beautiful Mrs. M. Some guys have luck!

Michigan visitors included Marv Hahn and Jack Ledger of the Gillen Co., Dowagiac, reporting progress . . . and Larry Kinnear, from Lochinvar, also at a high temperature . . . and a pleasing father and son combination: Clyde Teesdale the pump man from Grand Rapids, and son Rufus, back from the war . . . and of course the best rotary burner exhibit these tired old eyes have ever seen: the Timken Silent Automatic that was firing in a large round boiler, and you watched it thru large windows set near the top of the firebox. Other eye-catchers were an oil-furnace with a swinging front door jacket panel and a swell slogan: "The Royal Family of Oil Heating," meaning all TSA products. Human members I saw included Crawford, Marbury, Powers, Haugen, Jordan, Nowack, et al.

Walter Czarnecki, the Eddington Metal Specialty man came in to visit us, leaving brothers Stanley, Casimar and Wesley back boosting production. Pop is in Fla. . . . Penn Switch's exhibit was a knockout "T" square to indicate good design. Loyal Goshenites who rallied around included Henning, Luscomb, Netedu, Lige, Cash, Tinkey, Rubel (oh brother, those stories), Barr, Cameron, Jennison, etc. . . . Chrysler-Airtemp's booth showed winter and summer equipment and models to prove "How It Works." Staff included Russell, Malcolm, Shirley, Mougey, Bartell, Mishler, Magill and other rotary compressor boys.

Perfex Controls showed a swell line of "Twins" nursed along by Gentleman Luthe, Thunderbolt Lewis, Barkie Boalt, Smoothie Butler, Collar-Ad McMicken, Stinky Miller, Skutch Werb, Deacon Spahr, Blooey Crew, Lense Soper, Powers Model McGuire and other Men of Distinction. We love them all . . . Kewanee fired a round Type R boiler and showed a cut-away of the 27-81 Type C. Palmer, Schultz, Hartman and Quirke were there . . . Dan Bierman's swell gang at the Petrometer-Liquidepth exhibit spent their time casting for the gold fish in their tank.

**I'm the only Uproarous character on an otherwise dignified Staff. In this appearance, however, I am without the Roarous, and very little Up, because I have been cut down. The Editors want to purify me. If you are friends of mine, drop them a line, quick, or it will be off with my head. They are worried about me and want to save my soul. I'm practically sober with grief. Couldn't we get together over a few dozen drinks and talk about this? Write in and ask for your disreputable, beaten down, but true friend—**

***Old Joe Keyhole.***

The crew included Dan and Artie Bierman, Milair, Altemose, Jawett, Wargas, Miss Choinski (Miss "OHOT") and others (all proud of the company's 20th birthday) . . . Ray White of Gilbert & Barker in Springfield, Mass., dropped in to "Economy Clutch" one of our canes.

At the S. T. Johnson Co. booth, the Econolux 150,000 Btu job was proudly displayed by Kline, Johnston and Thoms . . . Legg and Bohr, who are putting out the new Federal "Boilermaker's Boiler" were telling everybody to "See for yourself" . . . The Rheem water heater was shown in a very beautiful booth with gals and other decorations. Nugent and Johannson seemed to have the situation well in hand . . . an ingenious "hand over flame" demonstration featured the Waterfilm Boiler spot. Art Hanson and Ed Wodecka were there with those fresh Jersey City wisecracks.

Automatic Products of Milwaukee had their usual interesting booth with Roy Johnson, Vallee, Jones, Thompson, Conway and Merrick being "Dependable" all over the place . . . We liked the slogan at the U. S. Radiator booth: "Merchandisers of Human Comfort." Their boys included Carl Baumgardner, Vic Blackney, Harry Repp and o.t.n.t.m. . . . Yep, that Tempscribe and Eyrite man, Ulrich of Bacharach Instruments, was there, with Nunnally, a new boy . . . and at the very interesting Research Air Filter booth, Kliefoth, Cunningham, Schutz and Brown proved that dust can be eliminated . . . "All-Electric" Gustafson, of Sundstrand Engineering, Rockford, Ill., visited us.

A very good-looking booth was the Minneapolis-Honeywell spot. Their controls rested in beautiful frames. Their men rested not at all, being very helpful in the busiest booth at the Show. We saw C. B. himself, Art Lockrae, Harold Chappler, Henry Carlson and a lot more control men who know no limit in serving the industry (Wow! Do I get a new Agratherm for that?) . . . but I wish to announce from the highest peak, that Perfection Stove stole the Show with an eye-smacking-neon-sign-topped display. The Homogen-Air milk bottle idea was the cutest in the place. Foulds, Goodwin, MacLaren, et al.

sold "floor to ceiling comfort" with no cream on top.

"High Quality" was the word for the Waterman-Waterbury furnace exhibit. Cross, the globe trotter, was in charge, backed by Dave Sedgwick, Griefnow, White, Lonsen, Doring, Bazelle and others . . . John Mele, from New Haven, showed his Mel-Products, gauges, etc. . . . and from Dayton, Ed Lau and Tom Byrd told visitors to the Lau Blower booth why they are "world's largest" . . . as usual that Thatcher Furnace crowd from Gar Wood, N. J., was right in there at the big-league level. "Heating is our only business," their sign said, and the units were swell. Bows to Sahler, Cook, Freese, Beard, et al. . . . and close by Bell & Gossett boys put over that "Hydro-Flo" story. A great crew, including Hammer-Lock Moore, Pullam, Malm, Patterson, and E. J. himself.

The Torrington fan "Know-How" crowd included Don Leslie, Lyman, Whelan, and Boots and Saddles Doster. A very C.F.M. booth, if I may say so.

Harvey-Whipple, from Springfield, Mass., had some mighty good Master Krafters there to tell about efficiencies and "quick interchange of parts," including Whipple, Harvey, Hodgdon, Dee, and Malone . . . the "Guardian" himself—Malmfeldt, the coupling man, from Michigan City, Ind., worked hard through the Show . . . and Cleaver-Brooks' Bob Denny and Geo. Siggins, the Jersey Flash, "Steam-Generated" all over the place . . . "Fulflo" was the word at the Commercial Filters booth, where Fielding and Sherburne held forth . . . and at the Dongan Electric transformer space, Hicks, Evans, Walter and Murphy gave excellent exhibitions of self-defense . . . and another good transformer man, Leo Harnett, of Jefferson Electric, showed nimble footwork, too, in his booth. Both companies held the good will line all week.

The Oil-O-Matic Exhibit featured the Low Pressure Principle which Obeys the 4 Laws of Combustion. This crowd, happy and sun-tanned, included Matty Matheson, Read, Davison, Tom Green, Pinkerton, Earl Nesmith, Wright, Stagg, Lahey and many others. The big question of the week: "Who stole whose false teeth in the McFadden Deauville, or the Mystery of the Missing Choppers." . . . Across the aisle was General Electric's motor and transformer exhibit, with Del Roloff, Ondrovik, A. L. Kelly, Bush, et al., featuring a huge furry cat, to illustrate the smoothness that makes G.E. products "long-lived." Their's was a tough assignment in a motor and transformer hungry world. But they did it well.

Allen Putt, Hopkins and Gardner handled a very interesting booth for Bendix-Friez, with "Indoor Weather Controls" featuring the Amptrol Switch. How could anything so good come out of Maryland? . . . "America's Most Complete Line" was featured in the York-Shipley booth very impressively. Ed Nahunt, Padou, Babcock and Alft kept things moving. Sam Shipley, their capable leader, dropped in for a while . . . that noise you heard at the northwest corner of the Hall was Sundstrand Machine Tool, where the shrinking violent of the industry, Bill Kemp, talked about fuel units. Pete Kjellstrom, Lange, Wahlmart and Kiefer backed him up on the "Long-Life, Service-Free, Quiet and Precision-Built" platform.

Which brings us to Petroleum Heat & Power, where MacCart, Groves, Jack Corrigan, Scotty Elder, Babcock and other PH&P guys gave out about "Reliability." They rate very highly with us, particularly since a horse named "Petro-Boy" won us some dough at Hialeah recently . . . Automatic Devices exhibited the "Weather-Man," and the success of this product is a tribute to Hank Kucera's unswerving devotion to a single idea through good years and bad. Pennington and Wallin helped out in the busy booth . . . close by was Watts Regulator, where B. E. and George Horne presided over a fine exhibit of Watts Products. They report steadily increasing business.

"Engineering that Excels; Features that Outsell" was the spirit of the Delco booth from Rochester, N. Y. Blue-Eyes Judd headed things, with Julian Warren, Mann, Smith, Oldenburgh and Lewis backing him up . . . a better exhibit old Joe has never seen than the demonstration of heating and cooling of a Firecrete brick in the Johns-Manville display. A Wow! Old man Kent, take a bow!

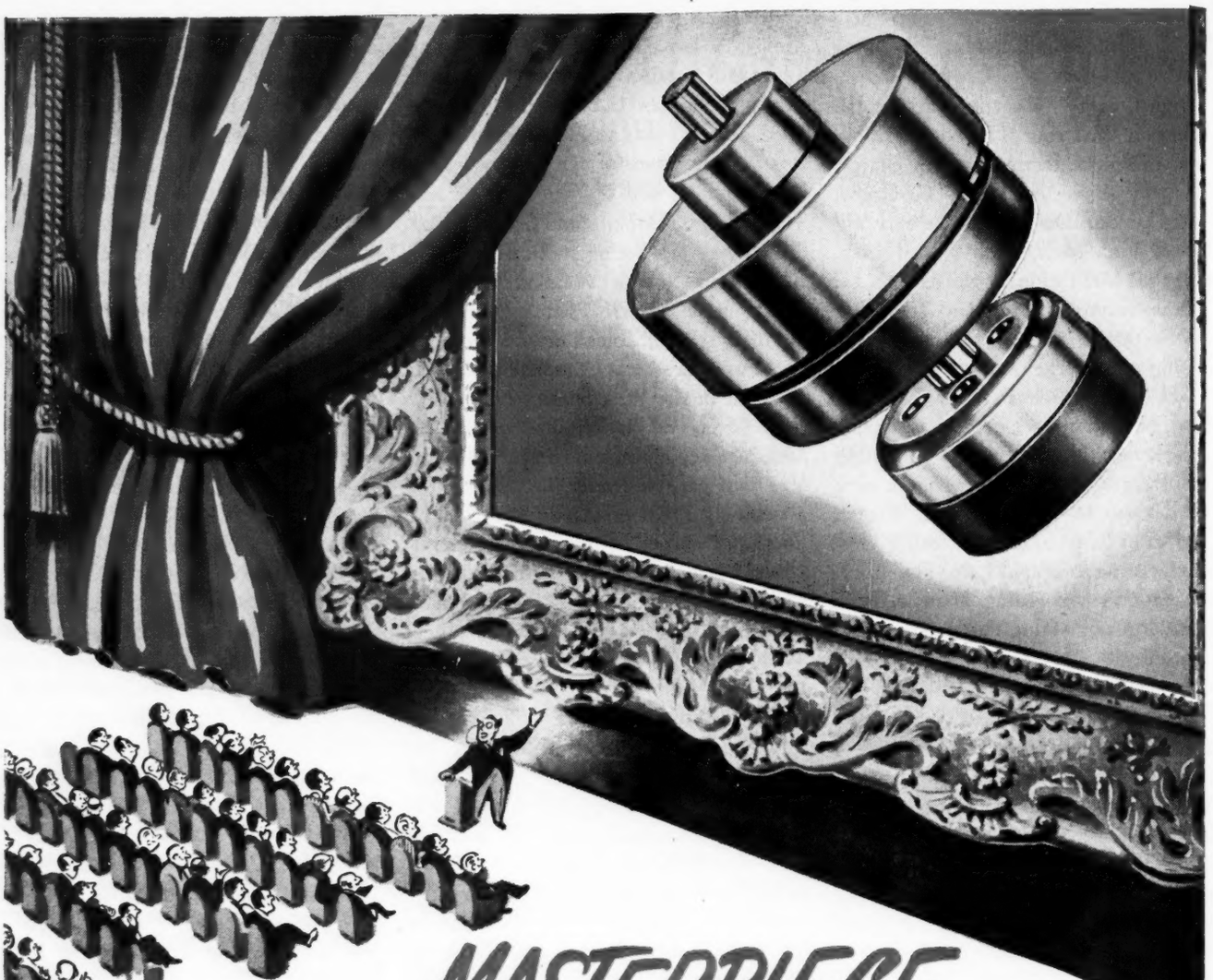
That familiar red-and-yellow Tuthill Pump booth was manned this time by Kessler, Bill Wagner, Jack Young and Bill Fleming. Fuelstat production is up, they say, and we say that's very good news indeed . . . "Ball-Flame" Stamm, the oilburner man from Palisades Park, N. J., also showed "Power-Matic" burners. Landau, his faithful helper was there . . . and a newcomer, Hinckley with the Rapid Heat Vertical Burner out of Detroit, got a very big play from visiting dealers . . . but one high-spot on the floor was the plastic-modelled Clark-National Burner, from Brooklyn, showed by Perry, Charles and Maury Wolfe, three of the many mild-mannered Wolfe boys. "Precision Built for Greatest Economy" they claim for this Horizontal Rotary.

F. W. and J. G. Dwyer showed the Dwyer Orsats and other splendid instruments. They are making fine progress in serving oilheating men . . . Nelson Delavan, Gene Olsen, and old man McNally, had a very good Delavan Engineering booth. Their "Because" story on a blown-up Balloffett Nozzle picture, was superb . . . and General Filters, Inc., from Detroit, whom we have admired for years, showed up with "The Filter That's Making Such Remarkable Progress." Art Redner and Bob Gregory, with their lovely wives, greeted thousands of visitors . . . for a comparative newcomer, that Homease Division booth (Bogue Electric Co., Paterson, N. J.) got a terrific play. Schinman, Bob Birkins, Hudson and other Homease boys had their hands full.

Whom did I meet but I. M. Nelson a real old-time Old Timer, in the Boston Machine Works booth, helping Ralph Dennis show Idea Nozzle Extractors, Apthorp Nozzles, Instant Glo Chambers, and Clearview Gauges. Also the sensational Breese Horizontal burner, about which an announcement will be made . . . most fascinating booth was Miller Co., from Meriden, Conn., where Ralph Delancey, Tom Lawler, Church, Sullivan, and Phelan showed their excellent new boiler burner unit. But, My Gosh, that "Spiralating Heat Wave!!" After a short view of it, address Joe Keyhole, c/o Alcoholics Anonymous.

Webster Electric always overpowers Joe, with products, and good men. Doc Ford, Ben Weichers, Hallinan, Osborn, Ehrich, Crewe, Kleckner and Hastings, showed transformers, fuel units, and the "Thermodrive" . . . and Detroit Lubricator—there is another outfit that specializes in good men and products. Have you seen the new CRC 246? Ed Doucet, Bill Hohmeyer, Ted Coggins, Spike Thorndyke and other Detroiters mentioned it a few times during the week . . . most unique

(*Continued on page* 132)



# AN ENGINEERING *MASTERPIECE*
## THAT CAN SPELL NEW SUCCESS FOR YOU!

Grueling endurance tests are still going on at the Gilbarco Laboratories where Gilbarco ECONOMY CLUTCH Oil Burners are running in continuous "start and stop" operation. One clutch has now engaged and disengaged over *700,000* times without appreciable wear!

This grind is equivalent to more than *140 years of average* home-heating use! Almost beyond belief, isn't it? And think what a competitive advantage you have when you sell a burner like this! The ECONOMY CLUTCH . . . truly an engineering masterpiece . . . can lead the way to new sales records for you.

Offer the new Gilbarco ECONOMY CLUTCH Oil Burner to Your Prospects — You'll Have a Sure Sales Edge!

**IT GIVES GREATER FUEL ECONOMY** . . . freedom from heavy soot deposits results in important fuel conservation.

● **IT PRODUCES MAXIMUM HEAT** . . . precision atomization assures full burning of the fuel from instant of ignition.

● **IT ALLOWS MORE UNIFORM HEATING** . . . closer thermostat adjustment permits more even comfort control.

● **IT ASSURES CLEANER HEATING** . . . both inside and outside the heating plant.

● **IT OPERATES WITH NEW QUIETNESS** . . . the burner starts and stops quietly, with no strain on the motor.

Gilbarco

**THE OIL BURNER WITH THE ECONOMY CLUTCH**

GILBERT & BARKER MFG. COMPANY

WEST SPRINGFIELD, MASS., AND TORONTO, CANADA

## Oil Output in 1946 Higher than Wartime

UNITED STATES production of crude oil in 1946 is estimated by the Bureau of Mines at 1,731,000,000 barrels, or 1.2% above 1945 production. Average price of crude at the well rose from $1.22 in 1945 to $1.41 in 1946.

The Bureau estimates the total value of mineral fuels for 1946 at $5,700,000,000 and crude petroleum accounted for $2,440,000,000 including stripper well subsidies, compared to $1,795,000,000 for coal.

Production and imports of all oils was about 55,000,000 barrels higher than consumption during the year, for total stocks rose by that amount.

Natural gas sold in 1946 reached 4,040,000,000,000 cubic feet, 4% above 1945 and brought at retail $835,000,000.

## Canadians Face Shortage Of Light Fueloils

AN ACCUTE SHORTAGE of range oil for space heaters and converted stoves and ranges has developed in Eastern Canada, and the supply of furnace oils is only slightly better, according to Canadian oil men. Furnace oil prices were increased by Imperial Oil, Ltd. from a quarter of a cent to a cent a gallon on January 15, due to higher freight, crude and materials costs, according to officials. Furnace oil selling at 10.75 cents was increased a half cent in Quebec and Ontario, a quarter cent in the Maritime Provinces, a cent in the Prairie Provinces and a half cent in British Columbia. Most other refiners and distributors were expected to announce similar increases in the near future.

### Many More Burners

Enormous increases in the demand for stove and heating oils in the Montreal district have resulted in a shortage that will last until about February 15th, W. T. A. Bell, Montreal manager of Imperial Oil, Limited, has said.

In anticipation of the shortage, due to the number of coal stoves converted to oil-burning in the last 12 months, Imperial Oil laid in approximately 17,500,000 gallons of imported stove oil before navigation closed to supplement the normal supply from its Montreal East Refinery. Subsequently, the company has been moving oils to Montreal from its Sarnia and Halifax refineries, Mr. Bell said.

Arrangements have been made also for two cargoes totaling about 8,500,000 gallons of stove oil from South American, and U. S. gulf ports. These will be unloaded at Portland, Maine, and moved to Montreal through the pipeline.

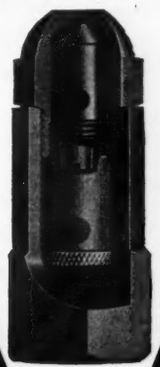
"This additional supply, however, will not be available until about February 15 as in addition to time required for transportation, the oil will have to be reprocessed to remove contamination from the pipeline which normally carries crude oil," Mr. Bell added.

Some dealers have sufficient fueloil to supply all contract customers, it was learned. British American Oil Company said it would fulfill any contracts it has with jobbers or private consumers with regard to fueloil. Shell Oil Company, which supplies only the heavy fuel used to heat large buildings, said it had "plentiful supplies" on hand.


# TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

**Monarch Nozzles are preferred by most of the Oil Burner Industry because:**

1. **Capacities and spray characteristics are *uniform*. Each nozzle is *individually* spray tested and checked for capacity against the flow of a calibrated master sample and capacity tolerances are as low as plus or minus 2½%.**
2. **Standard nozzles will fire most gun type high pressure burners satisfactorily, but special series are also available for burners requiring nozzles with specified spray characteristics.**
3. **For twenty years "Monarch" has pioneered most major oil burner nozzle improvements.**



**Air Cones & Stabilizers**

Monarch air cone and stabilizer combinations have made thousands of old burners more efficient and are used as original equipment by many burner manufacturers. Their use in combination is really your assurance of satisfactory performance, because every size and style has been thoroughly fire tested in laboratory or field over a period of many years. Eliminate guess work. Use tried and tested equipment.

**Replacement Valves**

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

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**MONARCH MFG. WORKS, INC.**

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# Operating Comparisons for Individual Markets

IN THE JANUARY ISSUE each year appears a statistical analysis of oilheating as an industry for the year just closed. The figures are in most instances shown for regions or areas of the country, such as New England, Midwest and the like. On that broad a base they are quite representative of industry conditions, due to the large number of dealers included.

However, there are frequent requests each year for some of the data to be further separated to individual markets, since it is well known that local differences between cities often have a considerable effect on prices and costs.

In the table on burner prices and costs, and on service department measurements, it has been possible to show ten markets. There were enough dealer reports from each of those to be considered reasonably representative and useful, although the figures are not as solid as those for wider regions, previously mentioned.

The fueloil figure table shows only eight markets, for in this one all New York suburbs have been lumped together.

It has often been said that oilheating is not a homogeneous industry, that it is rather a lot of little industries, city by city. While in general that is not correct, nevertheless there certainly are wide differences between markets on some items . . . for example, the average 1946 sale price for a conversion oilburner.

As was true the previous year, New York City again had by far the highest burner prices, with $524 average for a simple conversion installation including a 275 gallon tank. Notice, however, that the percent of gross margin in the city was almost the lowest shown in the city comparisons, indicating clearly that costs were far highest in New York. Spending $273 for installation materials and labor, exclusive of the burner, was $100 more than in any of the other cities.

Some of this excessive New York cost is due to unreasonable local ordinances, such as requiring rigid conduit for low voltage thermostat wire, and some of it reflects the business attitude of many New York dealers. Many will pay whatever is necessary to get scarce items, or to finish a job quickly.

Philadelphia led in gross profit, due mostly to the fact that installation materials and labor averaged only $120, lower than any other city shown. The large difference between Portland and Seattle on installation material costs was apparently due to Portland dealers including the cost of buried tanks, which go with nearly all jobs in that city.

Lowest priced burner city was Boston, with the market there paced, or at least held down, by the burner price of one large oil company.

A couple of points need explanation. "Mohawk Valley" in the table includes all of the New York Central cities from Albany to Buffalo. The item "Estimated Cost of Universal Service" is what dealers think they would have to charge for complete service and parts if they had all customers on an annual service basis.

In the fueloil table, the margins with bulk plants at Boston are lower than those of the companies without bulk plants. Margin in that market, and in some others, is related more to gallonage than to function. The annual gallons of distillate per customer includes both residential and small apartment-commercial heating.

**Fueloil Distribution Data**

| | Boston | New York City | New York Suburbs | Mohawk Valley | Philadelphia | Chicago | Portland Oregon | Seattle Tacoma |
|---|---|---|---|---|---|---|---|---|
| DISTILLATE FUELOIL | | | | | | | | |
| Gallons per Customer | 1,986 | 1,917 | 2,027 | 2,380 | 1,773 | 2,107 | 1,059 | 1,157 |
| Customers per Truck | 186 | 201 | 229 | 126 | 214 | 265 | 340 | 313 |
| Miles per Truck | 9,518 | 8,888 | 12,351 | 13,100 | 15,010 | 14,727 | 13,083 | 11,326 |
| Gallons per Truck (Thous.) | 384 | 385 | 450 | 256 | 372 | 338 | 536 | 472 |
| Gallons per Drop | 178 | 245 | 301 | 193 | 221 | 387 | 371 | 266 |
| Gallons per Truck Mile | 40 | 43 | 36 | 20 | 25 | 23 | 41 | 42 |
| *Per Cent of Customers on Automatic Delivery* | 83 | 83 | 89 | 91 | 79 | 57 | 57 | 80 |
| MARGIN—WITH BULK PLANT | 2.07¢ | .. | 2.29¢ | 2.11¢ | .. | 2.15¢ | .. | .. |
| Without Bulk Plant | 2.28 | 2.08 | 2.27 | 2.10 | 2.09 | 1.80 | 2.11 | 2.42 |

**Burner and Service Comparisons**

| | Boston | New York City | Westchester County, N. Y. | Long Island | North Jersey | Mohawk Valley | Philadelphia | Chicago | Portland, Oregon | Seattle Tacoma |
|---|---|---|---|---|---|---|---|---|---|---|
| CONVERSION BURNER PRICE | $347 | $524 | $439 | $381 | $398 | $367 | $382 | $382 | $364 | $380 |
| Burner Cost | 121 | 141 | 128 | 146 | 147 | 123 | 121 | 125 | 105 | 127 |
| Installation Materials | 92 | 183 | 136 | 113 | 109 | 80 | 79 | 88 | 105 | 78 |
| Installation Labor | 42 | 90 | 51 | 44 | 59 | 46 | 41 | 56 | 71 | 67 |
| Gross Margin | 92 | 110 | 124 | 78 | 83 | 118 | 141 | 113 | 83 | 108 |
| *Margin, as % of Sale* | 27 | 21 | 28 | 20 | 21 | 32 | 37 | 30 | 23 | 28 |
| SERVICE MEN'S WAGES | | | | | | | | | | |
| Average Top Men | $1.33 | $1.58 | $1.53 | .. | $1.50 | $1.35 | $1.40 | $1.83 | $1.82 | $1.85 |
| Average Helpers | 1.04 | .99 | 1.08 | .. | .98 | 1.12 | .99 | 1.16 | 1.63 | 1.53 |
| SERVICE INCOME | | | | | | | | | | |
| Minimum Call Charge | $3.08 | $2.93 | $3.51 | $2.91 | $3.07 | $3.15 | $3.39 | $3.50 | $3.07 | $3.09 |
| Service Contract Charge | 16.58 | 17.94 | 20.09 | 14.83 | 17.64 | 15.30 | 19.58 | 17.71 | .. | .. |
| Vacuum Cleaning Charge | 5.62 | 8.34 | 10.52 | 7.29 | 7.23 | 6.88 | 7.45 | 8.20 | .. | 6.63 |
| ESTIMATED COST UNIVERSAL SERVICE | $15.22 | $13.84 | $21.65 | $13.08 | $16.57 | $17.62 | $13.61 | $14.96 | $22.80 | $19.46 |

## Underwriters Booklet Shows Listed Oilburners and Units

UNDERWRITERS' LABORATORIES, INC., has issued its List of Inspected Gas, Oil and Miscellaneous Appliances, dated November, 1946, which shows all the oilheating equipment passed to date.

The booklet shows conversion oilburners made by 208 manufacturers, and oilfired units of 59 manufacturers. There are industrial oilburners by 28 manufacturers and 36 oilfired stoves, as well as controls and accessories.

# New Home Oilheating Is Relatively Expensive

OILHEATING DEALERS in 1946 sold installations for new homes at only 4% under old home jobs for conversion burners, but 12% under old home jobs for furnace-burner units. These figures come from the hundreds of dealer reports received for the January statistical issue and were not included in that issue because of time pressure.

Only 12% of all oilburners installed in 1946 went into new homes, compared with 24% in the last prewar year. The reasons for this are clearly known to individual dealers and manufacturers, but it is not a healthy situation for oilheating's long-range public acceptance outlook.

Neither manufacturers nor dealers went out of their way to encourage new home work for the simple reason that every burner made could be readily sold to an individual householder to replace coal-firing, and at a good price. As a result of this situation there were a number of new home developments that originally intended to install oil heat but had to switch to gas in the windup, because no one would sell them oilfired plants.

As this situation goes on, it will become increasingly harder to interest home builders, particularly builders of large developments, in using oilheating . . . especially since gas jobs cost less to install and the builders know that the public will buy almost anything in the way of a home and its accoutrements.

Perhaps we could let gas have most of the new home work, and we take the more profitable conversion variety. Trouble is that gas would become known as a poor man's fuel, and, even more important, we would not have the new home outlet for our surplus oilburners that will be with us in volume before too many months.

The table shows that the average conversion oilburner brought last year $354 when put in a new home, compared with $370 for all conversion burners, a difference of 4.3%. On boiler units, new homes paid $735, against an average for all such jobs of $770; they saved 4.6%. On furnace units, however, dealers acted more like they wanted new home work, for they sold these jobs for $578, while getting $659 for all furnace-burner installations, a saving to the builders of 12.3%.

When the oilheating dealer installed the complete heating plant in a new home his price ran up into considerable figures. For a complete oilheating plant with all piping and radiation he got an average of $1,298, which represented $735 for the heating unit and $563 for the rest of the system. On warm air work he got an average of $992 for everything, divided into $578 for the heating unit and $414 for the duct system.

These figures show that, across the board, a boiler heating system costs around 30% more than a warm air system, or at least this is true when it's an oilfired system. This fact has much to do with the popularity of warm air in the new home program.

It is indicative, however, of the fact that our industry has not gone far into new home product development, to notice that we don't come near the 8% figure that planning agencies think should be the limit for heating system cost. On a $10,000 G.I. house, $800 is considered maximum for heating.

Some two or three burner manufacturers are working on products to stay well within this figure, and may start selling them in 1947.

There were considerable geographic differences between new home oilheating prices, with the Midwest treating the builders best on everything but conversion burners, and with Pacific Northwest dealers charging substantially more than dealers in any other section. The reasons are not too clear, but in the Northwest it is well known that labor costs are particularly high, and it is also known that the demand for oilheating for old and new homes is so strong that few dealers can bring themselves to quoting anything below top prices.

Again, this is a situation that can change rather quickly when burners start coming through in excess volume, which in Washington and Oregon will apparently be somewhat later than in other areas.

**New Home Oilheating Prices 1946**

| | *New England* | *Middle Atlantic* | *Mid-west* | *Pacific Northwest* | *Other Sections* | *U. S. Average* |
|---|---|---|---|---|---|---|
| Conversion Burner | $ 349 | $ 342 | $ 358 | $ 390 | $ 370 | $ 354 |
| Boiler-Burner Unit | 695 | 749 | 604 | 920 | 760 | 735 |
| Furnace-Burner Unit | 643 | 517 | 572 | 831 | 550 | 578 |
| Complete Boiler System Including Radiation | $1291 | $1293 | $1144 | $1439 | $1403 | $1298 |
| Complete Warm Air System Including Ductwork | $ 982 | $ 993 | $ 945 | $1130 | $ 960 | $ 992 |
| Per Cent of New Home Work Done on Cost-Plus Basis | 14.3 | 7.0 | 7.1 | 8.9 | 12.9 | 9.1 |

Selling new home oilheating on a cost-plus basis made headway in 1946, though this may prove to be short-lived, as home builders and buyers get progressively more cautious. More than 9% of all new home jobs went in without an agreed price. Some of the best builders were known to have made such deals with oilburner men, because otherwise they hadn't been able to interest them. Once such a program started, these builders set about to show the burner company how to expedite its work and get costs down. In New England particularly did the cost-plus idea take hold.

It would be a fine thing for the industry to get more such business, not to save dealers the trouble of estimating contracts, but rather to remove their suspicions about builders in general and convince them that mass installations do cost less than single ones.

## Two Additional Schools For Burner Service Men

IN A RECENT ISSUE were listed 14 technical or trade schools throughout the country having courses of instruction for oilburner installation and service men. Two additional ones have since been called to our notice. These are:

Boston Technical Institute, 4707 Euclid Ave., Cleveland, Ohio; Philadelphia Wireless Technical Institute, 1533 Pine Street, Philadelphia, Penna.

# OHI Completes Convention Plans For Atlantic City March 24-26

PLANS FOR THE Twenty-fourth Annual Convention to be held at the Traymore Hotel, Atlantic City, N. J., March 24, 25 and 26 were announced at the January meeting of the Oil-Heat Institute directors at New York. No oilheating equipment show will be held in connection with the convention, but a full schedule of meetings will be held with the entire industry encouraged to attend. Meetings will be open to all oilheating men, regardless of their connection with the Institute. The convention is being publicized as an industry convention, sponsored by OHI.

Announcement has been made by headquarters officials that hotel rooms will be made available to those members of the industry who make their reservations promptly. Industry men are being encouraged to bring their wives and stay for the entire week. An adequate number of rooms are available to anyone who wishes to make reservations with Oil Heat Institute, 30 Rockefeller Plaza, New York, and a schedule of entertainment is being arranged for the ladies.

Authoritative speakers are being engaged to cover the various problems that are ahead for 1947, and fill in the picture on competitive fuels. Besides the merchandising aspects of the business, new methods of burning oil will be discussed.

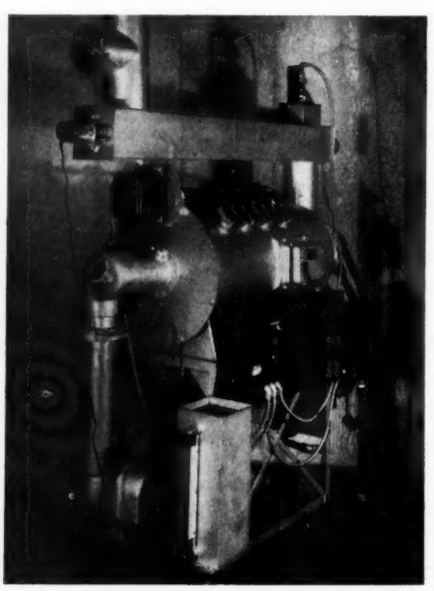
Monday, March 24, will be Institute Day. Distribution Division directors and Accessory Division executive committee meetings will be held in the morning, followed by an OHI directors' luncheon meeting. In the afternoon the Distribution division will hold its annual meeting and election, and the OHI engineering committee will meet. There will be a ladies' reception and tea in the late afternoon.

Tuesday, March 25, is Engineering Day, featuring an open engineering session in the afternoon under the chairmanship of Frank Faust. The OHI annual meeting and election of directors will be held in the morning, followed by a luncheon meeting of the new directors, at which officers will be elected. Ladies' entertainment for the day will get under way with a morning assembly.

Wednesday, March 26 is Industry Day. Distribution Division directors will meet for breakfast, following which an industry Merchandising Session will be held under the chairmanship of Carl R. Jonswold. Speakers have not yet been announced for the sessions. An Industry Luncheon with a prominent speaker will be held at noon with W. A. Kemp presiding, following which there will be an Industry Forum with W. A. Matheson as chairman. These sessions will be open for questions and open discussion by all who wish to attend. OHI directors will hold a reception for guests and the press prior to the Annual Banquet at 7:30 p.m. A registration fee will cover admission to all sessions, luncheons and the banquet.

### Reference Burner Ready

Directors at their January meeting heard from Frank Faust, chairman of the Engineering Committee, that the first Combustion Reference Test Unit has been completed and delivered to the laboratory of the Petroleum Heat & Power Co.,



*Combustion Test Unit*

Stamford, Conn., where it is being put in operation. The unit will provide a standard means of determining the burning qualities of fueloils in high and low pressure burners, as well as making comparative tests of the performance characteristics of various oilburner component parts. It was voted to appropriate additional funds to employ an independent research laboratory to explore all possible fields of usefulness for the unit, and to prescribe procedures for its proper use.

R. S. Bohn, chairman of the Finance Committee, presented a new dues schedule for members based on their individual volume of business, which was adopted.

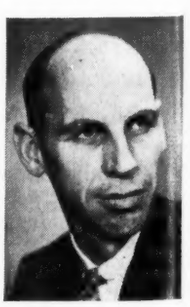
Applications for membership in the Manufacturer Division which were favorably acted upon were received from Independent Oil Burner Corp., Jamaica, N. Y.; DeSoto Oil Burner Corp., York, Pa.; General Oil Heating Corp., West New York, N. J.; Fairfield Oil Heating Co., Greenwich, Conn.; and National Oil Burner Co., Brooklyn, N. Y. Watts Regulator Co., Lawrence, Mass., was elected to membership in the Accessory Division.

◈

*John E. Garlent,* executive vice president of Motor Wheel Corporation since 1940 and associated with the corporation since 1920, has been elected president of the corporation by the board of directors. Mr. Garlent succeeds Harry F. Harper, who was president and general manager of the corporation since its inception in 1920. Mr. Harper resigned January 7 from his post due to ill health.

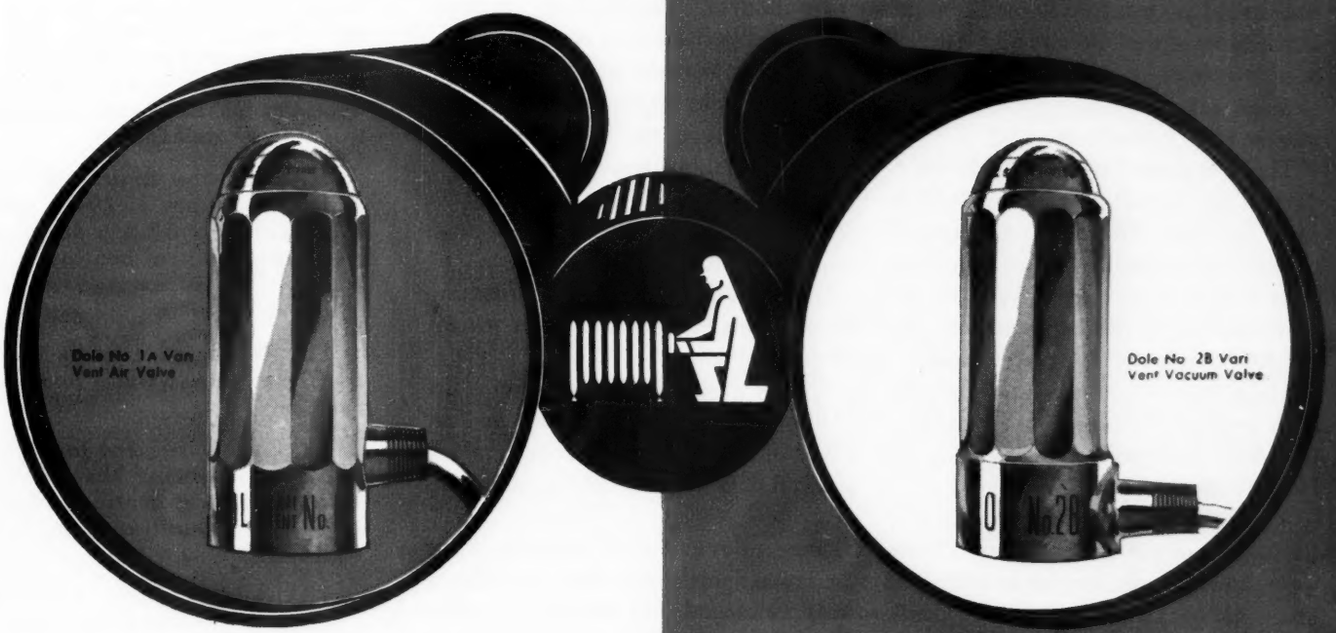
Motor Wheel Corporation is one of the nation's leading manufacturers of automotive, agricultural, and industrial implement wheels, and oilburning appliances.

*Theo. Valjean* has been named assistant service manager for the Duo-Therm Division of Motor Wheel Corp., Lansing, Mich., according to M. F. Cotes, vice-president. Mr. Valjean joined Duo-Therm engineering department in May, 1937, and in 1942 was appointed field engineer. He will assist A. R. Frantz, service manager, and will have charge of the service school which is scheduled to start early this year.



# DAILY DOUBLE

**Replace with DOLE AIR VALVES or Convert with DOLE VACUUM VALVES**




It pays DOUBLE to replace inefficient air and vacuum valves as a daily routine . . . pays the customer greater heating comfort . . . pays YOU a good profit.

**DOLE**

Then you can double up again by spotting opportunities to convert one-pipe steam systems to vacuum operation . . . with a handsome profit to yourself . . . and a big fuel saving to your customer.

**AIR AND VACUUM VALVES**

**THE DOLE VALVE COMPANY • 1933 CARROLL AVENUE • CHICAGO 12, ILLINOIS • REPRESENTATIVES IN PRINCIPAL CITIES**

# Ration Data Released by Interior Department

LARGELY AS A RESULT of work done by the Atlantic Coast Oil Conference, through its executive secretary, Clyde Morrill and FUELOIL & OIL HEAT, the number and gallonage of all fueloil rations issued are being made public by the Department of the Interior. Ed Swanson, deputy director of Interior's Oil and Gas Division is the man who agreed to undertake the work in his division.

The table shows rations issued by OPA districts for the full year June 1, 1944 to May 31, 1945. The districts comprised the normal trading areas of which the cities named are the centers. With the exception of one or two Midwest spots, the districts are all within a state boundary.

The figures on heating rations are to be made available for every local board during 1947. They will be published as released from month to month.

Recall that fueloil was rationed in only 33 states, not the entire country. These were, however, the important oilheating areas. Also recall that there was no identification of the various kinds of fueloil.

R-1100 was for heating or water heating in residential structures for three or less families. Central heating, according to OPA rules, meant any plant that heated the whole house and distributed this heat through a system of pipes or ducts. The principal departure from industry practice here was that pipeless furnaces, using a regular type oilburner, were classed as space heaters by OPA. Space heaters included both flue-connected and portable type heaters, also included range burners, floor and wall furnaces and pipeless furnaces.

R-1101 was for the same uses but for non-residential buildings.

R-1102 was for industrial, government or occupational uses other than heating, and not including agricultural uses.

R-1103 was for cooking, lighting and other household non-heating uses and for all agricultural uses.

R-1104 was an application form to get additional oil in hardship cases, and resulted in the issuance of a total of 4.1% more oil than shown by the initial rations in the table.

Some adjustments are needed to bring the ration figures up to date and into line with normal industry identification practices. These are shown in the box at the right.

However, even without any such adjustments, these ration data provide an accurate appraisal of the relative importance of markets.

## To Make the Table Current

**The figures shown are as of May 31, 1945. They do not include pipeless furnaces. In the period from May 31, 1945 and January 1, 1947 there were installed in residences in the 33 rationed states 462,545 residential burners for central heating, not including those installed as replacements. The original figures included water heating rations where no oilheating was involved, though this was a small factor.**

**To bring the figures up to date for January 1, 1947, add approximately 33.2% for the residential central heating columns. This is arrived at as follows:**

**(1) Deduct 1.1% to take out the exclusive water heating rations.**

**(2) Add 7.1% for pipeless furnaces, to bring them over into the central heating brackets. (Not including floor or wall furnaces.)**

**(3) Add 25.75% for the additional installations since the ration date.**

**To adjust the gallonage figures to include all supplementary allowances add an average of 4.1%.**

### Fueloil Rations Issued by OPA

June 1, 1944 to May 31, 1945

| HEATING USES | | | | | | | | | NON-HEATING USES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R-1100 Central Heating | | R-1100 Space Heaters | | R-1101 Central Heating | | R-1101 Space Heaters | | | R-1102 | | R-1103 | |
| Number | Avg. Gal. | Number | Avg. Gal. | Number | Avg. Gal. | Number | Avg. Gal. | OPA DISTRICT | Number | Avg. Gal. | Number | Avg. Gal. |
| 23,040 | 1,683 | 97,174 | 585 | 3,234 | 3,758 | 3,187 | 565 | Augusta, Maine | 7,699 | 12,048 | 68,951 | 66 |
| 222,179 | 1,502 | 671,517 | 503 | 32,602 | 3,424 | 17,155 | 464 | Boston, Mass. | 23,245 | 19,205 | 85,828 | 137 |
| 19,092 | 1,602 | 72,381 | 361 | 2,742 | 3,106 | 1,810 | 485 | Concord, N. H. | 4,670 | 8,204 | 32,816 | 84 |
| 95,755 | 1,447 | 222,620 | 473 | 10,454 | 4,771 | 5,865 | 516 | Hartford, Conn. | 9,269 | 22,417 | 33,392 | 611 |
| 7,923 | 1,781 | 37,118 | 521 | 1,435 | 3,354 | 1,326 | 519 | Montpelier, Vt. | 4,151 | 2,184 | 36,116 | 95 |
| 32,527 | 1,413 | 96,452 | 512 | 5,333 | 4,515 | 3,445 | 498 | Providence, R. I. | 4,504 | 46,017 | 26,875 | 152 |
| 400,516 | 1,502 | 1,197,262 | 509 | 55,800 | 3,783 | 32,788 | 490 | TOTAL REGION 1 | 53,538 | 18,708 | 283,978 | 165 |
| 32,081 | 1,564 | 82,654 | 470 | 6,899 | 3,562 | 4,103 | 565 | Albany, N. Y. | 8,277 | 4,490 | 76,845 | 112 |
| 6,163 | 1,520 | 19,484 | 417 | 1,449 | 2,841 | 1,383 | 460 | Binghamton, N. Y. | 4,978 | 7,033 | 46,879 | 90 |
| 27,255 | 1,427 | 60,603 | 482 | 5,177 | 3,712 | 3,482 | 592 | Buffalo, N. Y. | 9,583 | 19,790 | 44,962 | 101 |
| 266,785 | 1,616 | 236,862 | 311 | 48,571 | 6,565 | 17,201 | 359 | New York, N. Y. | 30,198 | 17,212 | 72,514 | 159 |
| 13,466 | 1,561 | 58,056 | 434 | 2,638 | 3,685 | 2,685 | 344 | Syracuse, N. Y. | 8,881 | 3,525 | 76,932 | 105 |
| 36,624 | 1,125 | 41,463 | 322 | 6,258 | 2,550 | 1,899 | 447 | Camden, N. J. | 5,973 | 21,755 | 51,366 | 100 |
| 114,663 | 1,670 | 159,592 | 397 | 17,543 | 5,812 | 7,694 | 443 | Newark, N. J. | 12,353 | 35,926 | 23,455 | 95 |
| 33,855 | 1,376 | 49,579 | 391 | 6,135 | 3,795 | 2,922 | 439 | Trenton, N. J. | 6,822 | 16,708 | 42,379 | 100 |
| 313 | 1,741 | 4,153 | 105 | 48 | 1,922 | 248 | 199 | Altoona, Pa. | 5,838 | 9,452 | 61,460 | 55 |

## Fueloil Rations Issued by OPA (continued)

| HEATING USES | | | | | | | | | NON-HEATING USES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R-1100 Central Heating | | R-1100 Space Heaters | | R-1101 Central Heating | | R-1101 Space Heaters | | | R-1102 | | R-1103 | |
| Number | Avg. Gal. | Number | Avg. Gal. | Number | Avg. Gal. | Number | Avg. Gal. | OPA DISTRICT | Number | Avg. Gal. | Number | Avg. Gal. |
| 11,795 | 1,407 | 19,850 | 235 | 1,263 | 3,026 | 1,110 | 386 | Harrisburg, Pa. | 8,251 | 7,841 | 86,859 | 96 |
| 133,688 | 1,297 | 67,655 | 162 | 20,362 | 4,490 | 3,777 | 263 | Philadelphia, Pa. | 19,354 | 30,367 | 81,846 | 94 |
| 2,498 | 1,306 | 10,764 | 333 | 291 | 3,113 | 765 | 371 | Pittsburgh, Pa. | 12,526 | 31,137 | 84,040 | 77 |
| 1,178 | 1,403 | 3,587 | 143 | 125 | 2,636 | 162 | 247 | Scranton, Pa. | 4,275 | 6,932 | 51,821 | 42 |
| 1,856 | 1,522 | 4,960 | 231 | 259 | 3,030 | 227 | 352 | Williamsport, Pa. | 4,857 | 3,437 | 39,864 | 70 |
| 96,010 | 1,224 | 109,913 | 235 | 9,555 | 3,944 | 6,465 | 399 | Baltimore, Md. | 12,010 | 26,986 | 143,772 | 97 |
| 12,713 | 1,352 | 18,012 | 319 | 1,783 | 5,585 | 1,448 | 467 | Wilmington, Del. | 2,009 | 36,207 | 26,096 | 115 |
| 31,533 | 1,099 | 13,201 | 174 | 6,589 | 3,602 | 658 | 375 | Washington, D. C. | 1,398 | 24,288 | 10,344 | 148 |
| 822,476 | 1,456 | 960,388 | 340 | 134,945 | 5,807 | 56,229 | 419 | TOTAL REGION II | 157,583 | 19,516 | 1,021,074 | 96 |
| 290 | 1,292 | 2,111 | 160 | 47 | 871 | 234 | 260 | Charleston, W. Va. | 5,828 | 19,562 | 98,466 | 59 |
| 4,556 | 1,212 | 22,055 | 322 | 646 | 4,616 | 1,545 | 466 | Cincinnati, O. | 12,225 | 6,353 | 70,929 | 126 |
| 8,339 | 1,298 | 28,306 | 319 | 956 | 7,539 | 1,509 | 422 | Cleveland, O. | 20,464 | 20,878 | 89,254 | 94 |
| 1,563 | 1,181 | 6,565 | 228 | 164 | 3,103 | 629 | 362 | Columbus, O. | 13,160 | 2,879 | 84,002 | 106 |
| 7,054 | 1,380 | 16,510 | 449 | 1,206 | 4,013 | 1,284 | 542 | Toledo, O. | 11,185 | 5,921 | 64,989 | 104 |
| 47,129 | 1,528 | 99,068 | 548 | 6,075 | 6,180 | 6,530 | 653 | Detroit, Mich. | 19,803 | 12,815 | 71,500 | 99 |
| 12,005 | 1,398 | 45,985 | 569 | 1,522 | 4,087 | 3,439 | 632 | Grand Rapids, Mich. | 12,714 | 3,874 | 94,761 | 90 |
| 1,301 | 1,606 | 6,549 | 593 | 183 | 2,212 | 549 | 536 | Escanaba, Mich. | 2,078 | 1,948 | 23,926 | 53 |
| 6,580 | 1,327 | 39,775 | 594 | 1,091 | 3,718 | 2,776 | 629 | Saginaw, Mich. | 10,051 | 8,669 | 68,137 | 87 |
| 19,715 | 1,251 | 52,068 | 359 | 2,160 | 3,585 | 4,539 | 455 | Indianapolis, Ind. | 33,495 | 3,048 | 284,094 | 109 |
| 425 | 1,041 | 2,582 | 219 | 30 | 3,752 | 286 | 273 | Lexington, Ky. | 4,422 | 5,838 | 92,929 | 86 |
| 1,317 | 1,553 | 8,605 | 173 | 234 | 5,499 | 842 | 300 | Louisville, Ky. | 12,922 | 4,206 | 117,271 | 150 |
| 110,274 | 1,406 | 330,179 | 467 | 14,314 | 5,096 | 24,162 | 547 | TOTAL REGION III | 158,347 | 8,207 | 1,160,258 | 102 |
| 25,058 | 1,057 | 75,479 | 310 | 1,683 | 2,614 | 4,199 | 428 | Richmond, Va. | 8,417 | 9,992 | 179,831 | 81 |
| 22,450 | 988 | 12,403 | 234 | 701 | 8,807 | 1,424 | 229 | Roanoke, Va. | 5,536 | 2,872 | 120,306 | 67 |
| 5,894 | 997 | 30,040 | 225 | 472 | 1,260 | 2,591 | 313 | Charlotte, N. C. | 10,963 | 1,796 | 204,838 | 105 |
| 7,354 | 988 | 47,505 | 261 | 852 | 1,510 | 4,500 | 350 | Raleigh, N. C. | 14,423 | 2,990 | 271,306 | 120 |
| 4,116 | 950 | 42,236 | 225 | 592 | 2,175 | 3,896 | 297 | Columbia, S. C. | 11,459 | 3,725 | 261,733 | 102 |
| 9,534 | 410 | 212,312 | 131 | 4,153 | 2,540 | 15,807 | 185 | Jacksonville & Miami, Fla. | 22,577 | 19,351 | 300,818 | 103 |
| 1,040 | 594 | 15,664 | 181 | 113 | 2,224 | 1,306 | 237 | Atlanta, Ga. | 6,791 | 1,574 | 207,034 | 69 |
| 2,082 | 695 | 26,862 | 202 | 513 | 2,074 | 2,665 | 261 | Savannah, Ga. | 5,548 | 18,563 | 152,579 | 72 |
| 77,528 | 925 | 462,501 | 197 | 9,079 | 2,821 | 36,388 | 264 | TOTAL REGION IV | 85,714 | 8,816 | 1,698,445 | 94 |
| 8,301 | 1,427 | 30,002 | 353 | 2,793 | 9,678 | 3,002 | 541 | Kansas City, Mo. | 23,952 | 5,339 | 165,853 | 141 |
| 14,976 | 1,295 | 56,524 | 369 | 2,375 | 6,070 | 1,804 | 472 | St. Louis, Mo. | 19,305 | 12,652 | 169,041 | 122 |
| 3,755 | 1,185 | 40,721 | 412 | 775 | 3,380 | 2,687 | 575 | Wichita, Kans. | 51,359 | 1,211 | 158,519 | 155 |
| 27,032 | 1,320 | 127,247 | 379 | 5,943 | 7,415 | 7,493 | 537 | TOTAL REGION V | 94,616 | 4,590 | 493,413 | 139 |
| 60,232 | 1,698 | 182,548 | 538 | 13,389 | 8,545 | 9,081 | 661 | Chicago, Ill. | 24,406 | 51,434 | 40,947 | 117 |
| 12,822 | 1,311 | 31,504 | 508 | 1,684 | 3,459 | 3,718 | 515 | Moline, Ill. | 23,045 | 1,357 | 74,249 | 122 |
| 5,784 | 1,363 | 14,919 | 426 | 901 | 2,567 | 1,698 | 433 | Peoria, Ill. | 23,472 | 2,050 | 69,204 | 108 |
| 5,540 | 1,263 | 22,691 | 320 | 993 | 4,629 | 2,877 | 459 | Springfield, Ill. | 33,240 | 4,062 | 228,269 | 102 |
| 7,511 | 1,416 | 26,159 | 520 | 1,167 | 2,513 | 2,521 | 540 | Green Bay, Wis. | 13,730 | 1,454 | 63,724 | 79 |
| 8,753 | 1,352 | 29,097 | 530 | 1,288 | 2,453 | 2,629 | 499 | La Crosse, Wis. | 18,454 | 839 | 66,289 | 92 |
| 34,192 | 1,462 | 65,905 | 533 | 4,261 | 3,144 | 4,407 | 551 | Milwaukee, Wis. | 27,637 | 4,752 | 72,858 | 96 |
| 4,150 | 1,558 | 16,881 | 612 | 360 | 2,813 | 1,012 | 598 | Duluth, Minn. | 5,443 | 2,955 | 39,418 | 64 |
| 62,863 | 1,333 | 93,662 | 574 | 5,340 | 3,686 | 6,545 | 542 | St. Paul, Minn. | 62,675 | 4,244 | 121,921 | 94 |
| 21,022 | 1,224 | 55,583 | 555 | 3,188 | 2,500 | 5,871 | 518 | Des Moines, Iowa | 73,590 | 620 | 170,969 | 127 |
| 6,539 | 1,220 | 20,434 | 573 | 1,087 | 1,936 | 2,271 | 646 | Sioux City, Iowa | 21,801 | 502 | 57,140 | 111 |
| 3,457 | 1,166 | 24,781 | 497 | 683 | 2,341 | 1,612 | 658 | North Platte, Neb. | 14,985 | 582 | 50,430 | 111 |
| 16,352 | 1,286 | 34,352 | 478 | 2,465 | 3,338 | 3,927 | 488 | Omaha, Neb. | 49,551 | 3,340 | 96,244 | 113 |
| 6,539 | 1,197 | 35,528 | 559 | 1,396 | 2,410 | 3,158 | 599 | Sioux Falls, S. D. | 27,007 | 539 | 92,742 | 97 |
| 6,406 | 1,305 | 23,432 | 568 | 805 | 2,043 | 2,112 | 564 | Fargo, N. D. | 27,648 | 479 | 109,423 | 103 |
| 261,982 | 1,416 | 677,476 | 532 | 39,007 | 4,928 | 53,439 | 558 | TOTAL REGION VI | 446,684 | 4,874 | 1,353,827 | 104 |
| 1,031 | 801 | 7,506 | 537 | 101 | 2,505 | 579 | 553 | Boise, Idaho | 2,507 | 2,430 | 4,519 | 152 |
| 1,031 | 801 | 7,506 | 537 | 101 | 2,505 | 579 | 553 | TOTAL REGION VII | 2,507 | 2,430 | 4,519 | 152 |
| 30,090 | 1,165 | 74,792 | 546 | 4,933 | 8,465 | 5,613 | 586 | Portland, Ore. | 23,951 | 17,109 | 61,511 | 151 |
| 60,916 | 1,046 | 126,514 | 521 | 8,487 | 6,216 | 8,812 | 545 | Seattle, Wash. | 18,497 | 15,417 | 37,088 | 94 |
| 4,720 | 1,156 | 29,321 | 486 | 688 | 3,615 | 2,084 | 581 | Spokane, Wash. | 17,315 | 1,702 | 23,445 | 92 |
| 95,726 | 1,089 | 230,627 | 525 | 14,108 | 6,876 | 16,509 | 563 | TOTAL REGION VIII | 59,763 | 12,121 | 122,044 | 122 |
| 1,796,565 | 1,412 | 3,993,186 | 429 | 273,297 | 4,865 | 226,006 | 465 | TOTAL ALL REGIONS | 1,058,752 | 8,949 | 6,137,588 | 106 |

## Little Change in Prices Forecast by Prince, G-E

EXCESSIVE PRICES for some products should come down in 1947, but in general there will be marked over-all change in either prices or wages, David C. Prince, vice-president of General Electric Company, told members of the Marketing Club of the Harvard Graduate School of Business Administration early in January. He forecast a prosperous year for both consumers and producers and a more normal relationship between prices of different kinds of goods and services.

Speaking on the subject, "Postwar Planning in Review," the G-E official pointed out that the gross national income for 1947 should be about the same as last year, $190,000,000,000. Based on that figure, and discounting strikes and other economic abnormalities, he said that increased production of durable goods would result in a normal distribution of output, and lower prices in the nondurable field.

In the prewar peak-year of 1941, the speaker said, economists prepared a normal breakdown of the national income for "the Victory plus two" year, which turned out to be 1947. At that time it was estimated that the national income for 1947 would amount to $135,000,000,000. However, due to a sharp rise in prices since 1941, the probable gross national income this year, based on the same volume, will be $190 billion.

Pointing out that consumer expenditures in 1946 amounted to $125 billion, as estimated, Mr. Price said, "We are getting the habit again of spending the normal proportion of the national income for consumer goods."

"If we continue on the present level," he added, "we will have a reduction in consumer expenditures of about $6,000,000,000, which will mean that more money will be turned over to the capital formation for badly needed housing programs."

In 1945 about 7 per cent of the national income went for consumer durable goods, as compared to the prewar estimate of 14½ per cent, Mr. Prince pointed out. Last year the consumer percentage showed an increase from the first quarter of 9 per cent to 12 per cent at the end of the year's third quarter, he said, adding:

"Judging from that trend, we can figure that we are returning to the habit of spending the normal proportion of our income for consumer durable goods."

Expenditures, except for government spending, are returning toward their prewar pattern, the speaker said. Although government spending in 1947 should be sharply reduced due to cutbacks in military contracts, he explained, it is likely that government expenditures in 1947 will be about the same as last year.

"We cannot do anything about government expenditures during 1947," Mr. Prince said, "but we can divide up the balance of the national income for consumer and capital expenditures in the same proportions as we visualized them in our 1941 estimates."

The speaker pointed out that while "we were right on the button in estimating $125 billion for the consumer expenditures," the 1941 estimates for government and capital spendings have been reversed. Estimates showed that $28 billion would be the total of government spending, and $36 billion would go for


*It's time for a Check-Up*

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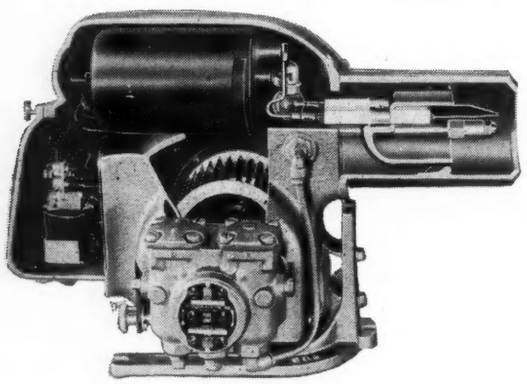

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# The 1947 Edition

## OF THE

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# GUIDE

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SECTION VIII—INSTALLATION AND TESTING CODES: (51) Codes and Standards.

### TYPICAL SECTIONS

AIR CONTAMINANTS—Shows latest acceptable limits for toxic gases, presented from the viewpoint of the industrial hygiene engineer.

AIR DUCT DESIGN—New air friction chart based on recent studies of A.S.H.V.E. Research Laboratory, includes method of correcting for pipe roughness.

CODES—List contains references to 81 codes and standards relating to Heating, Ventilating and Air Conditioning.

COOLING LOAD—Presents best available data on Solar Heat Transmission through glass. Latest information for determining components of heat and vapor gain.

DEHUMIDIFICATION—Principles of dehumidification by use of sorbent materials. Outlined and illustrative example given.

FLUID FLOW—Basic theory of fluid flow through pipe, nozzles, and orifices, presented clearly and concisely.

OWNING AND OPERATING COSTS—Shows method of establishing actual cost of air conditioning to the owner.

REFRIGERATION—Simple presentation of the different refrigeration cycles, and brief treatment of most commonly used equipment arrangements.

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WARM AIR SYSTEMS—Gravity and forced circulation system design in accordance with latest accepted practice.

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## HEATING VENTILATING AIR CONDITIONING GUIDE

*Published by*

American Society of Heating & Ventilating Engineers

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fueloil & oil heat

capital expenditures, but now these figures have been reversed.

"The required housing program," he concluded, "should raise capital expenditures to $34 billion at the expense of direct consumer expenditures. However, with a return to more normal prices of nondurable goods, the actual volume may not fall appreciably below the high levels of 1946."

◈

## Domestic Fuels Sufficient to Meet Future Demands

THE PHENOMENAL INCREASE in the use of oilburners is expected to continue for some time, there is every assurance that the supply of domestic heating fuels will be met this winter and in the future, according to a recent issue of *The Lamp*, company publication of Standard Oil Company (New Jersey).

Tracing the sharp increase in the use of oilburners, *The Lamp* points out that more than half of all American homes which have automatic central heating depend on oil. But, it adds, new processes for the recovery of light fueloil give still another assurance that the quantity and quality of heating oils will be adequate not only for existing types of burners but for all those expected to be sold during the next fifteen years.

◈

## Survey Shows Huge Commercial AC Market

BEGINNING THIS YEAR, $100 million will be spent annually for the air-conditioning of industrial and commercial buildings, according to a published research report just released by Michel-Cather, Inc., New York, specialists in industrial advertising, sales promotion and public relations.

Compiled under the direction of J. F. Brinley, account executive for that firm, the 26-page report, "The Market For Air-Conditioning In Commercial and Industrial Buildings," is based on a technical study of future markets for the air-conditioning of industrial buildings, hotels, restaurants, theatres, banks, hospitals, schools, department stores, and other commercial establishments.

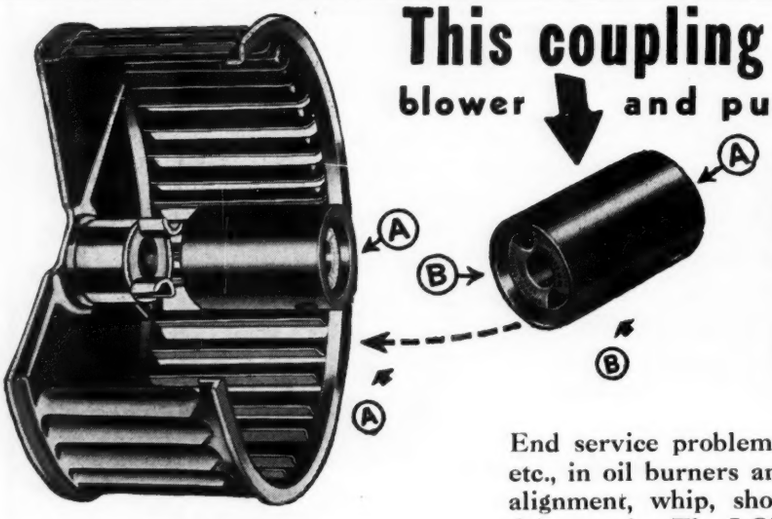
Giving a detailed forecast of the potential dollar-volume markets for air-conditioning in each of these fields, the survey indicates more than $91 million for air-conditioning will be spent annually by the commercial establishments. Five types of buildings will account for about half of this sum. They are: theatres, $12 million; department stores, $11 million; hotels, $8 million; restaurants, $8 million; and schools, over $7 million.

◈

## Bacteria May Increase Crude Oil Production

THE POSSIBILITY of using certain types of bacteria to increase the recovery of oil from subterranean deposits is suggested by U. S. Patent No. 2,413,278 issued on December 24, 1946, to Dr. Claude E. ZoBell, associate professor of microbiology at the University of California's Scripps Institute of Oceanography. The invention described by the patent, assigned to American Petroleum Institute, relates to an improved process for increasing or facilitating the recovery of oil, gas, or other valuable fluids from fluid-bearing earth formations.

While testing various kinds of bacteria


A.—L-R Body inserted in rubber body.

B.—L-R Socket molded in rubber engages blower hub.

# This coupling can't fall off when blower and pump units are serviced

# LOVEJOY L-R Type CX Double-flex Flexible Couplings

End service problems due to wear on pumps, small motors, etc., in oil burners and air conditioning units because of misalignment, whip, shock, surge, backlash between drive and driven units. The LOVEJOY L-R Type CX Double-flex flexible coupling efficiently corrects for these enemies of machinery, and is so constructed that it can't fall off when units are serviced.

**EASILY INSTALLED IN DARK OR CLOSE QUARTERS**

Rapid assembly, ease in installing, low cost, all make the Type CX Double-flex the *first* coupling to consider for efficient, economical use in your heating and air conditioning products. Manufacturers will supply blowers having L-R jaws on the blower hub.

Write for Bulletin 520 on the Lovejoy L-R Type CX Double-flex coupling.

LOVEJOY L-R Couplings from 1/6 to 2500 H.P.

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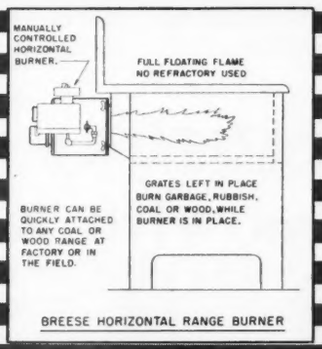
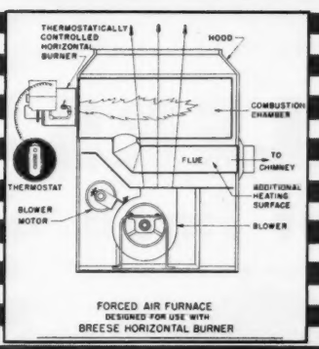
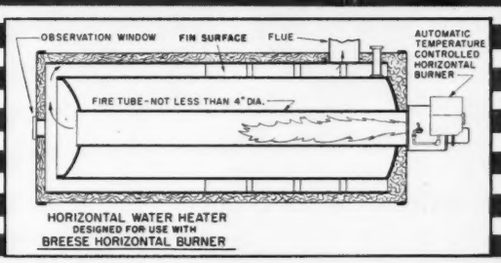
# THE BREESE HORIZONTAL OIL BURNER with Rheotrol*


MANUALLY CONTROLLED HORIZONTAL BURNER.
FULL FLOATING FLAME NO REFRACTORY USED
GRATES LEFT IN PLACE BURN GARBAGE, RUBBISH, COAL OR WOOD, WHILE BURNER IS IN PLACE.
BURNER CAN BE QUICKLY ATTACHED TO ANY COAL OR WOOD RANGE AT FACTORY OR IN THE FIELD.
BREESE HORIZONTAL RANGE BURNER



FORCED AIR FURNACE
DESIGNED FOR USE WITH
BREESE HORIZONTAL BURNER



HORIZONTAL WATER HEATER
DESIGNED FOR USE WITH
BREESE HORIZONTAL BURNER

Orders for the Breese Horizontal Oil Burner are being placed at a rate many, many times greater than was anticipated. Happily, we can say that small requests for training and development—and the field testing of appliances can be filled promptly. A sufficient quantity of these burners will be made available to Appliance Manufacturers this spring.

## OIL DEVICES

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for their ability to modify crude oils, Dr. ZoBell observed in March 1943 that certain cultures released droplets of oil from test tubes filled with calcareous material prepared to simulate underground oil-producing formations. Further experiments showed that the bacteria were able to release oil from samples of Athabaska tar sands and Santa Maria oily shales.

The research project, 43A, on the origin of oil, of which Dr. ZoBell is director, is concerned primarily with the part played by bacteria in transforming organic matter into petroleum. The investigations to date indicate that under certain conditions bacteria may produce oil, modify petroleum or its products, or release oil from sedimentary materials.

Laboratory experiments indicate that bacteria can release oil from oil-bearing sediments by dissolving calcareous materials, by crowding the oil off physically, and by producing surface-active substances. Carbon dioxide produced by the bacteria and the increased porosity caused by dissolving calcareous materials both favor the flow of oil. The ability of bacteria to grow in and to penetrate oil-bearing sediments has been demonstrated.

## Scandinavian Oil Conversion Worries British Coal Men

REPORTS RECEIVED in Britain indicate the extent to which Scandinavian countries are converting to oil and the degree of cooperation now developing between American and Scandinavian interests in this connection. Scotch coal exports have been very largely, if not completely, stopped and in view of current outputs and trends, the prospects for resumption are far from good.

One firm which formerly took 30,000 tons of Scottish coal annually is converting to oil as quickly as possible; the firm anticipating an annual consumption of 15,000 tons of fueloil instead of 30,000 tons of Scotch coal.

The equipment which is being installed and the oil to be used with that equipment are from America and American technicians have been active in the installation. The net result of this, and other conversions means a lost market for British coal assuming it becomes again available, and also a long term hold on the Scandinavian markets by those American engineering and oil concerns which have come to their rescue when British coal supplies failed.

◈

*Paul F. Neess* has been appointed manager of Controls Sales Engineering and *Richard E. Toellner* has been made district manager with headquarters in Detroit for the Perfex Corp., Milwaukee. Mr. Neess formerly was vice-president

Neess

Toellner

and chief engineer of Shallcross, Inc., and joined Perfex in 1936. Mr. Toellner joined the company in 1946, after three years in the Navy. He succeeds S. David Horner who resigned as Perfex' Detroit manager to enter his own business.


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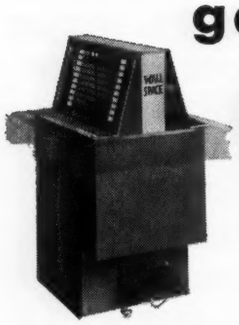
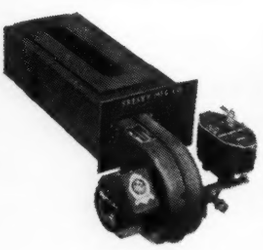
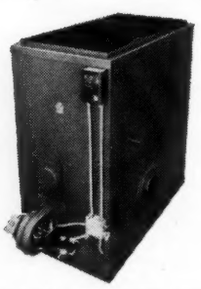


FLOOR FURNACES

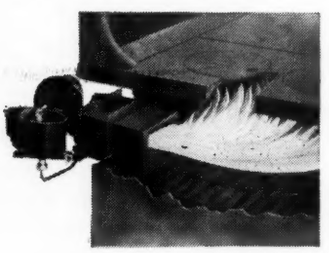


OIL BURNERS



FORCED AIR FURNACES

WATER HEATERS



RANGE BURNERS

Listed by Underwriters' Laboratories, Inc. To Burn No. 3 Oil (Diesel) or lighter

Wise dealers see in today's shortages the handwriting on the wall of tomorrow's profits. That's why so many are lining up now with Kresky, seeing in today's unprecedented demand a promise for future opportunity. ★ Always a money maker for dealers due to its versatility and adaptability to a wide list of uses, the Kresky line includes Conversion Burners, Range Burners, Floor Furnaces, Water Heaters and Forced Air Units for small homes. ★ Delivery only to old customers now, but inquiries are invited from live dealers with an eye to the future.

**KRESKY MANUFACTURING COMPANY**
*Pioneers in Oil Burning Equipment Since 1910*
**PETALUMA, CALIFORNIA**

Kresky Oil BURNERS

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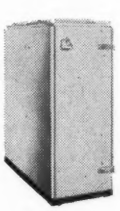
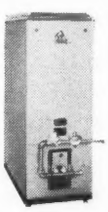
Two jobs in heating installations—the original set-up and later servicing—are easy with this Luxaire "Years Ahead" feature which is incorporated in many of the largest selling Luxaire units.

The completely assembled heating element can be placed as a unit in the cabinet when the heating system is installed and likewise is just as easily removed as a complete unit without disturbing cabinet or duct work should servicing be necessary.

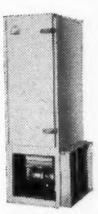
This is just one of the many Luxaire "Years Ahead" features which make Luxaire the "profit line" of heating equipment.



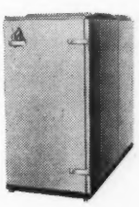
**Series A**
Gas-Fired, Steel
Air Conditioning Unit



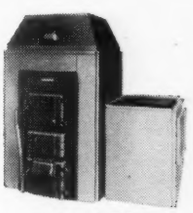
**Series G**
Gas-Fired, Steel
Gravity Furnace



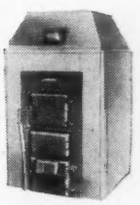
**Series H**
Gas-Fired, Utility Steel
Air Conditioning Unit



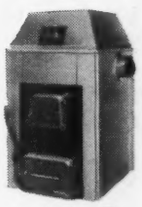
**Series O**
Oil-Fired, Steel
Air Conditioning Unit



**Series AC-700**
Coal-Fired, Steel
Air Conditioning Unit



**Series 700**
Coal-Fired, Steel
Gravity Furnace



**Series C**
Coal-Fired, Cast
Gravity Furnace

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA, OHIO

**Important: Luxaire gas-fired units have passed the latest requirement of the American Gas Association.**

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# *Industry Groups*

*Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 20th.*

## New England OHI Convention May 20-21

THE OIL HEAT Institute of New England will hold its annual convention at the Copley-Plaza Hotel, Boston, starting with a dinner Tuesday evening May 20 and running throughout the next day. The first evening affair is to be an employees' banquet, particularly for installation and service men, but with all employees welcome. Wednesday morning, the 21st, will be held the annual meeting with election of officers and directors. At the luncheon and dinner meetings that day will be prominent speakers, not yet announced.

At the Institute's quarterly directors meeting in Boston January 22, Fred Beckwith, executive secretary, announced that membership has passed the 300 mark, which had been the goal to be reached by May. There was an increase of 83 since the last annual meeting. The treasury showed a current bank balance of $11,420, obviously a strong position.

Total enrollment in the various Institute service training schools which are now in session is 413, compared with 282 last year.

## Northwest Assn. Moves Office

THE NORTHWEST PETROLEUM ASSN., Minneapolis, will move February 4 to a new office at 430 Syndicate Bldg. at the corner of Sixth St. and Nicollet Ave., according to an announcement from H. F. Horning, Secretary.

The association is holding its annual convention Jan. 30 and 31. The program had not yet been distributed at press time.

## New Jersey Oil Convention At Asbury Park April 24-25

THE ANNUAL CONVENTION of the Fuel Oil Distributors Assn. of New Jersey will be held April 24 and 25 at the Berkeley-Carteret Hotel, Asbury Park, according to a preliminary announcement from A. W. Rich, executive secretary. Program details later.

## Wisconsin Oil Heat Assn. Holds Annual Industry Rally

THE FOURTH ANNUAL INDUSTRY and rally of the Wisconsin Oil Heat Assn. is to be held at the Wisconsin Hotel, Milwaukee, Feb. 7. At these rallies, a considerable number of oilburner and fueloil men attend from other sections of the state, as well as local industry men who are not members of the association and who come as guests. The announced speaker is Robert Gray of FUELOIL & OIL HEAT, New York.

## Schepp Joins NYOHA As Executive Secretary

PHILIP H. SCHEPP, for several years with the New York regional OPA office as assistant head and then head of the fuel rationing section, has been appointed executive secretary of the New York Oil Heating Assn. He brings a wide knowledge of oilheating firms and people in the Metropolitan area.

At the Association's January 6 meeting seven directors were elected to the 1947 Executive Board to serve with the offi-


SILOO FUEL OIL TANK SOLVENT CLEANS and KEEPS CLEAN

**SILOO FUEL OIL TANK SOLVENT** keeps oil burner systems clean from *tank to burner.* It removes sludge and gum from clogged pipe lines, strainers and filters—disperses all water accumulations due to condensation. **SILOO FUEL OIL TANK SOLVENT** is nationally advertised and enjoys a reputation for assured profits in a wide market.

**SILOO FUEL OIL TANK SOLVENT** keeps the entire fuel system clean and free-flowing, thus eliminating the necessity of scouring and cleaning storage tanks. **SILOO FUEL OIL TANK SOLVENT** is non-inflammable, non-explosive, non-corrosive and non-toxic. Wholesale distribution only. Write today for particulars.

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Never before has the story of Hot Water and Steam Heating been presented to home planners in so colorful and adequate a manner! Sponsored by the Institute of Boiler and Radiator Manufacturers, this booklet is the keynote of a sustained advertising program to drive home the outstanding advantages of Radiant Heating *in all its forms.*

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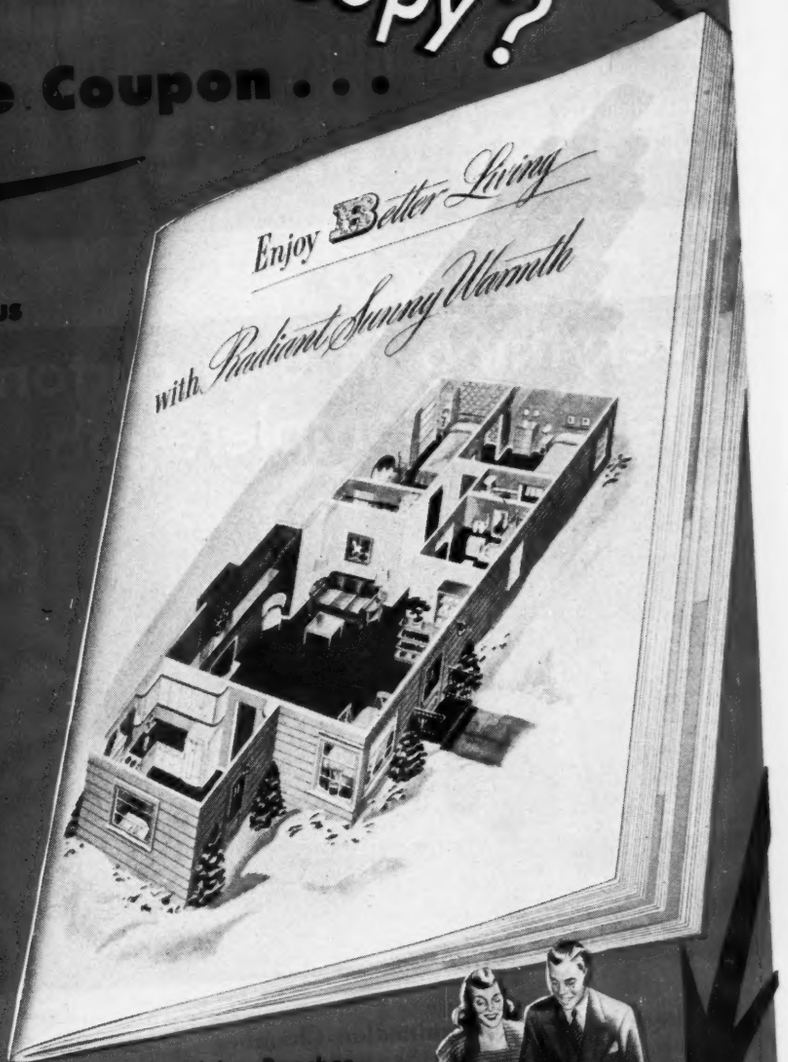
**A valuable help to Fuel Distributors**

"Enjoy Better Living" brings you up to date on the many amazing things modern heating science has devised to make a home supremely comfortable. It is interesting, instructive reading—send the coupon for your copy.



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## The *Institute* of Boiler and Radiator Manufacturers

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fueloil & oil heat

cers. These are Harry L. Bloomberg, Joseph Farrell, Dan Bierman, Hyman D. Rapps, Lawrence J. Murphy, Charles Kahn and Matthew Conviser.

## Pacific Coast OHI Meets Portland, March 1

THE ANNUAL MEETING of the Pacific Coast Oil Heat Institute will be held at the Multnomah Hotel, Portland, Oregon, March 1. A substantial group of burner and oil men will attend from California, Oregon and Washington. With registration at 11 A.M., there will be a luncheon meeting followed by speakers, then a dinner meeting and speakers.

## New England Oil Men's Assn. In Convention April 15-16

THE ANNUAL SPRING convention of the Independent Oil Men's Assn. of New England is to be held at Boston's Hotel Statler April 15 and 16. While full detail of the program is not yet determined, Clyde Morrill, executive secretary, has announced that the general theme of the meeting will be public relations, a subject particularly vital to the oil industry in this first real postwar year.

The first day will be turned over to a group of public relations specialists from the American Petroleum Institute. The second day will be devoted primarily to a town meeting and forum discussion on the several aspects of oilheating that need public relations study, such as oilburner service, driver relations with customers, advertising, fuel prices, etc.

## Mass. Oil Heating Assn. Holds Annual Meeting

AT ITS MEETING, January 31, members of the Massachusetts Oil Heating Assn. elected officers and directors for the coming year.

Officers elected for the ensuing year are President, Clarence Warner, General Oil Co.; Vice-president, Al Coop, Mass. Htg. Corp.; Sec.-Treas., Fred Heaney, Buckly & Scott Utilities, Inc. Directors named for the year are R. Wentworth, Petroleum Heat & Power Co.; Gus Dwelley, Automatic Htg. Corp.; Larry Williams, Scott-Williams; Mrs. C. Y. Woodbury, C. Y. Woodbury Co.; Parker Devlin, McDonnell-Miller; William Bennett, G. E. Company; and Jack McKearin, White Fuel Corp.

Guest speaker at the meeting was Robert Gray of FUELOIL & OIL HEAT.

## Northwest Petroleum Assn. Honors Hadlick at Meeting

A FEATURE OF THE Annual Convention of the Northwest Petroleum Association was a testimonial dinner for Elwin E. Hadlick, who resigned from active work with the group last year to head a Butane-Propane Assn. Hadlick had been the principal driving force in the Northwest Assn. for a number of years, being both its president and secretary.

Speakers at the two day session, which was held at the Radisoon Hotel, Minneapolis, January 30 and 31, included Joseph D. Hadley, executive secretary and general counsel of the Michigan Petroleum Assn., Tom Collins, humorist and philosopher from the City Bank & Trust Co., Kansas City, and D. M. Dickey, president of the Association.

**There is an R&I Combustion Chamber . . . bonding clips to lock sections together without cement . . . enough hearth material to make a floor 1½" thick . . . and cement to go around the burner blast tube—all in one strong carton which one man can easily carry.**

**There are no loose pieces to get mixed, lost or broken.**

**Without any cutting or fitting, every R&I Combustion Chamber can be installed round, rectangular or pear shaped.**

**Order from your supply house. Write us for Bulletin OB-98.**

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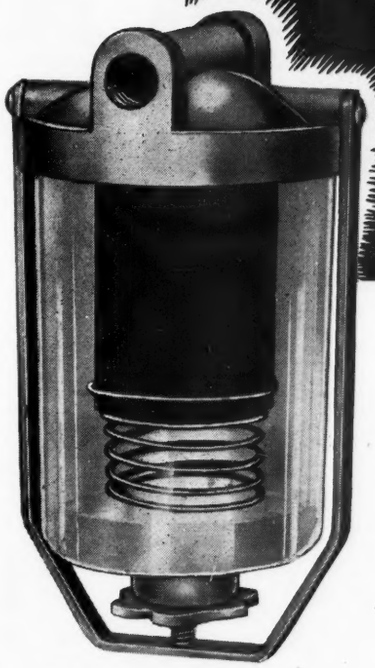
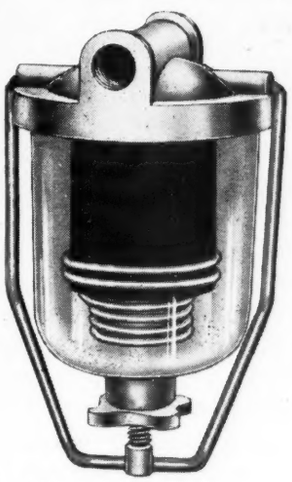
**R&I COMBUSTION CHAMBER**

# HOW TO CUT SERVICE CALLS AND MAKE EXTRA PROFITS



Model FF-201—¼" opening
Model FF-230—⅜" opening
6" high, 3½" diameter
Capacity: Approx. 50 gals. per hour



Model JR-60—¼" opening
Model JR-62—⅛" opening
4" high, 2¼" diameter
Capacity: Approx. 20 gals. per hour

with

## Klemm

## FUEL OIL FILTERS and CHEMISTONE the original controlled porosity element

## 9 OUTSTANDING ADVANTAGES

***for Central Heating Plants, Ranges, Space Heaters and other fuel oil burning equipment.***

- **VISIBILITY —** Anyone can see the condition of Chemistone filtering element at any time . . . No removal of parts necessary.
- **PERFORMANCE —** The Klemm Filter assures a steady oil flow by stopping all foreign matter from clogging the burner.
- **WIDE RANGE —** Efficient with Nos. 2 and 3 grades of oil normally used.
- **OIL TIGHT —** Extra wide gaskets in head assures a tight, efficient seal. Special locknut provides extra pressure to make an oil and airtight seal.
- **FLOW CAPACITY —** 20 gallons or more per hour at one foot gravity, according to model. See captions under illustrations.
- **EASY TO INSTALL —** Klemm Filters are readily installed on all standard burners — in fuel pipe line, at tank or burner.
- **SIMPLE SERVICE —** Filter element is easily removed and may be cleaned repeatedly. When necessary, new element can be put in at low cost.
- **LOW PRICE —** The Klemm is one of the most attractively priced units on the market—particularly when element replacement is considered. The Chemistone element may be cleaned many times and used over and over.

Every oil-burning heating plant should have a Klemm Oil Filter. It protects the burner against stoppages . . . and eliminates needless service calls for you. Klemm Units insure a steady flow of oil by trapping water, sediment, dirt and other trouble-making foreign matter. Your customers benefit by *uninterrupted* heating comfort . . . You profit two ways—a liberal margin on each sale and fewer calls for emergency repairs. ONLY the Klemm Fuel Oil Filter is equipped with the original, high-efficiency CHEMISTONE element.

**TERRITORIES OPEN**

**REPRESENTATIVES WANTED:** A few choice sales territories are open in New England, Mid Western and West Coast states. Ask for details on our liberal offer. Klemm Oil Filters sell easily at a good profit. Write today!

## Klemm AUTOMOTIVE PRODUCTS COMPANY

**1718 NORTH DAMEN AVENUE** **CHICAGO 47, ILLINOIS**

***Export Division:*** **Guiterman Co., Inc., 35 S. William St., New York 4, N. Y.**

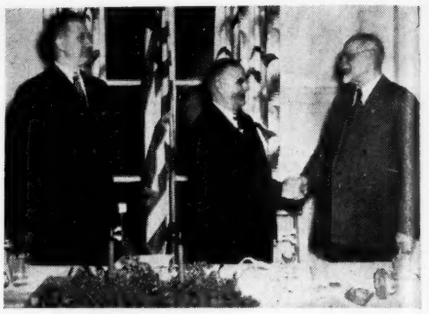
# Manufacturers Activities

## Addams Marks Anniversary For Self and Fitzgibbons

AN ANNIVERSARY CELEBRATION held recently at Oswego, N. Y., honored Homer Addams on the 25th anniversary of his leadership of the Fitzgibbons Boiler Company, Inc., and also marked the 60th Anniversary of the company. Mr. Addams is Chairman of the Board and President of the company, and Paul K. Addams, his son, is Chairman of the Executive Committee, Executive Vice-President and Treasurer.

Mr. Addams entered the heating business in 1895 with the firm of Barber & Ross at Washington, D. C. He became president of Fitzgibbons in 1921, after an active career with a number of firms in the heating business.

The company has expanded greatly under Mr. Addams' management, and during the period from 1941 to 1945 was engaged wholly in fabricating heavy steel plate for war uses. Products ranged from tank and tank destroyer hulls to gun shields and platforms, locomotive boilers and pressure vessels for rubber and high octane gasoline production. Fitzgibbons' output now has reverted to such peacetime products as power and steel heating boilers, winter air conditioning units, and an assorted line of special heavy plate fabrications.



**Homer Addams,** *right, is being congratulated by Geo. H. Campbell, a leading citizen of Oswego, N. Y., in recognition of 25 years service as president of Fitzgibbons Boiler Co. Paul K. Addams, his son, on the left, also was presented a service emblem.*

## Indiana Combines Groups

THE LIGHT OILS projects group and the heavy oils projects group of the Whiting refinery of Standard Oil Company (Indiana) was consolidated January 13, the consolidated groups to be known as the projects division, Dr. W. J. McGill, refinery manager, announced recently.

Dr. R. T. Myrick, assistant to Dr. McGill, will direct the activities of the projects division and Roy Diwoky will be superintendent. J. A. Rueff will be general foreman of light oils projects and P. C. Livesay will be general foreman of heavy oils projects.

## Nat. Radiator Issues Prices

A NEW PRICE LIST on radiators, convectors, enclosures and boilers has been issued by The National Radiator Co., Johnstown, Pa., effective December 17, 1946. The company also has announced that its invoices will be subject to a 1% cash discount if paid on or before the 15th of the month following date of shipment. Bills will become due on the following day and past due on the next succeeding day.

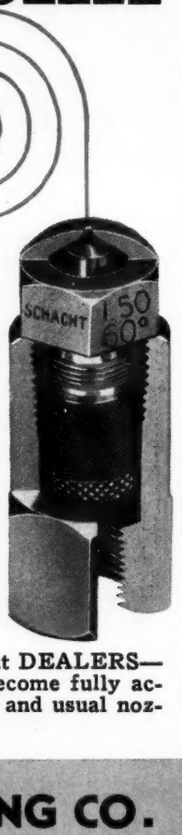

WE HAVE APPOINTED—

William J. Debler and Sons
Automatic Heat Devices

619 Acorn Street, Phila., Pa.
790 Broad Street, Newark, N. J.
1284 Beacon Street, Brookline, Mass.

OUR EXCLUSIVE EASTERN SEABOARD FACTORY REPRESENTATIVES FOR —

THE SCHACHT
STAINLESS STEEL NOZZLE
with the PATENTED
"WHIRL CHAMBER"




The SCHACHT NOZZLE is worthy of your consideration. Not only is it precision made, on newly created ingenious volume producing machinery, in a brand new modern plant, devoted exclusively to nozzle manufacturing, it has the "PATENTED WHIRL CHAMBER."

This CHAMBER, whirls the oil rapidly, breaking it up finer, supplies improved combustion, shorter, cleaner, increased heat producing flames. Added up, means *LESS* fuel consumption.

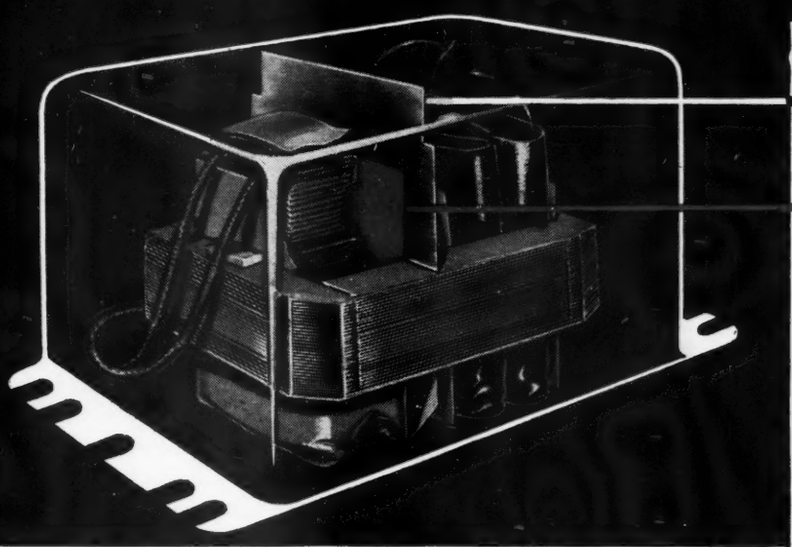
Too—this WHIRL CHAMBER sets up an agitation behind the orifice that helps to keep it clean, longer. LESS NOZZLE CLOGGING TROUBLES THEREFORE.

We are prepared to make immediate shipment and want DEALERS—JOBBERS and BURNER MANUFACTURERS to become fully acquainted with the SCHACHT NOZZLE-ADAPTERS and usual nozzle accessories—*N O W !*

WRITE TODAY FOR FURTHER INFORMATION

C. A. SCHACHT ENGINEERING CO.
— HUNTINGTON — INDIANA —

# NOW G-E IGNITION TRANSFORMERS ARE SELF-SHIELDED TWO WAYS TO PREVENT RADIO NOISE!



AT NO EXTRA COST—This new* G-E ignition transformer, self-shielded two ways to prevent radio noise, gives you a sure-fire sales advantage for your oil burner.

Two types of shielding are employed in these new transformers:

(1) electrostatic shielding, which blocks radio energy *radiated* from the secondary coil from feeding back into the household circuit.

(2) new electromagnetic shielding, which traps radio interference attempting to feed back by means of the transformer core into the household circuit. Together these shields prevent virtually all annoying radio interference generated by the furnace arc from reaching the household circuits through the transformer.

***You Get These Advantages***

1. Over-all suppression of radio frequency interference equal to that provided by normal internal shielding and external filter.

2. Savings in cost over the external filter method.

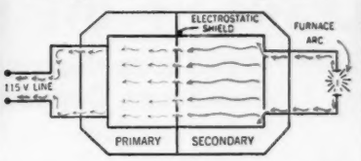
3. Economy of space—the magnetic shield is built into the transformer. G-E two-way self-shielded transformers (Class E) meet every standard for an unfailing high-voltage arc. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

***Limited quantities of G-E Class E ignition transformers with two-way self-shielding were manufactured just before the war. Although some burner manufacturers and dealers are already familiar with these transformers, they will still be important news to a large section of the trade.***

**ELECTROSTATIC SHIELDING**

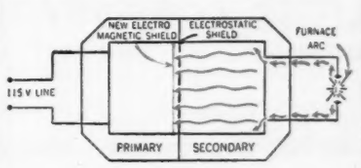
**ELECTROMAGNETIC SHIELDING**

**ELECTROSTATIC SHIELDING** prevents much of the radio-frequency interference caused by furnace arc from "riding" through to the 115-volt primary




— but some high-frequency impulses still get through.

**ELECTROMAGNETIC SHIELDING** absorbs these high-frequency impulses to eliminate virtually all remaining radio interference.



GENERAL ELECTRIC

411-2-5205

fuel oil & oil heat

## Oil-O-Matic Sales Force Hears Merchandising Plans

THE FIELD AND FACTORY SALES FORCE of Williams Oil-O-Matic heard sales plans for the spring and summer outlined by company executives at the Winter Sales Conference at Miami Beach, Fla., January 6 to 9. Speakers included H. W. Burritt, president of Eureka Williams Corporation, and W. A. Matheson, executive vice-president in charge of the Williams Oil-O-Matic Division.

Current production and sales position of the Company as well as future plans were discussed by Mr. Matheson. E. H. Davison, manager of heating sales and conference chairman, discussed sales plans for the coming year and the Oil-O-Matic new dealer program.

The Oil-O-Matic sales training program was explained in detail by J. H. Lahey, supervisor of industrial education; T. H. Green, special factory sales representative, and R. L. Plante.

Other subjects covered in the four-day session at the McFadden-Deauville Hotel were: "Dollars and Sense," D. W. Boylan, comptroller; "Dealer Identification," J. H. Read, advertising manager; "Survey Forms," R. G. Pinkerton; "Reaching New Horizons," M. V. Stagg, assistant to Mr. Matheson; "As the Engineer Sees It," O. E. Nesmith, vice-president in charge of engineering; "Getting There with the Preferred Purchaser Agreement," L. A. Casler, president of Stewart, Hanford & Casler, Inc.

SEE HOW KLEEN-FLO

CLEANS UP OIL BURNER SYSTEMS

—Reduces Service Calls—Eliminates Call-Backs. Dependable—Labor Saving —Economical.

Clears smoky oil fires—Reduces Carbon Deposits. Keeps oil lines and storage tank Clean. Try Kleen-Flo on one of your "Tough" Service Jobs.

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ALLIED APPLIANCE COMPANY
111 Berkeley Street Boston 16, Mass.

West Coast Distributor
DIAMOND OIL CO., INC.
550 Bauchet St., Los Angeles 54, Calif.

## Electric Furnace-Man Adding Burners, Freezers

ELECTRIC FURNACE-MAN, INC., sales affiliate of the General Machine Co., Emmaus, Pa., long a manufacturer of Anthracite stokers, soon will start shipping domestic oilburners and frozen food cabinets under the trade name "Gemaco," according to Fred Kalmbach, chairman of the board for General Machine. The company also will offer high quality gray iron castings from its expanded plant which includes a modern foundry now being erected.

Mr. Kalmbach also has announced the appointment of J. H. Simpson as general sales manager of Electric Furnace-Man. Mr. Simpson has been with Hershey Machine & Foundry since 1931, resigning as vice-president and manager of the Motorstoker Division to take the new position. He has been prominent in the stoker industry for many years.

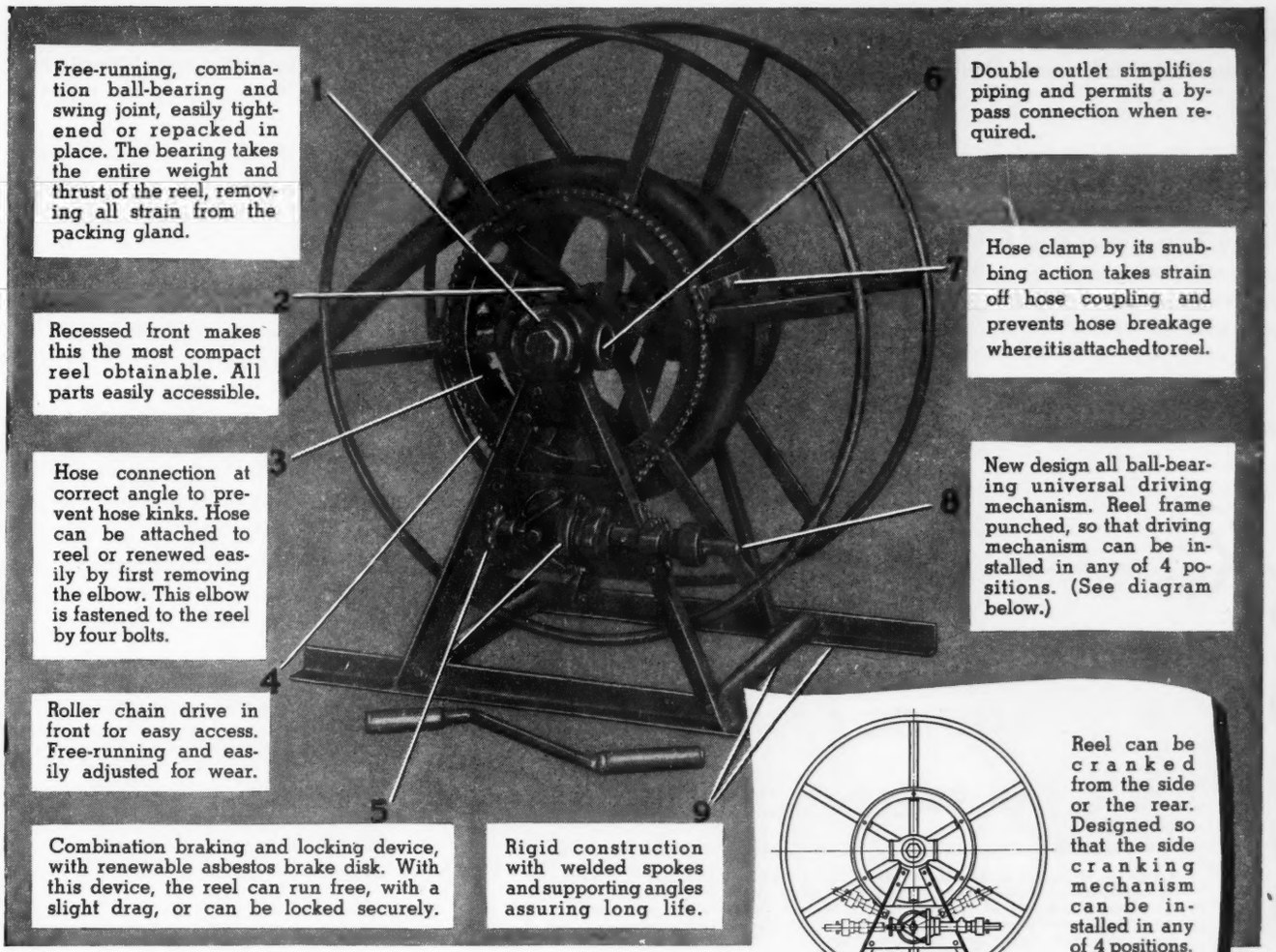
## G. E. Forms Affiliates Dept.

GENERAL ELECTRIC COMPANY has established an Affiliated Manufacturing Companies Department, and appointed Vice-President L. R. Boulware as general manager, President Charles E. Wilson has announced. E. J. Harrington has been appointed manufacturing manager of the new department, and Roy W. Johnson marketing manager.

## Borg-Warner Purchases Superior Sheet Steel Co.

BORG-WARNER CORP. has purchased the physical assets of Superior Sheet Steel Co., Canton, Ohio, to provide an additional source of sheet steel to increase its production. The mill is continuing under its present management and personnel as a Borg-Warner Division.

The Superior plant employs 600 men and produces black sheets and cold finished sheets.


1
Free-running, combination ball-bearing and swing joint, easily tightened or repacked in place. The bearing takes the entire weight and thrust of the reel, removing all strain from the packing gland.
2
Recessed front makes this the most compact reel obtainable. All parts easily accessible.
3
Hose connection at correct angle to prevent hose kinks. Hose can be attached to reel or renewed easily by first removing the elbow. This elbow is fastened to the reel by four bolts.
4
Roller chain drive in front for easy access. Free-running and easily adjusted for wear.
5
Combination braking and locking device, with renewable asbestos brake disk. With this device, the reel can run free, with a slight drag, or can be locked securely.
9
Rigid construction with welded spokes and supporting angles assuring long life.
6
Double outlet simplifies piping and permits a by-pass connection when required.
7
Hose clamp by its snubbing action takes strain off hose coupling and prevents hose breakage where it is attached to reel.
8
New design all ball-bearing universal driving mechanism. Reel frame punched, so that driving mechanism can be installed in any of 4 positions. (See diagram below.)
Reel can be cranked from the side or the rear. Designed so that the side cranking mechanism can be installed in any of 4 positions.

# *The New Hose Reel You Have Been Looking For*

**COMPACT, RUGGED, LIGHT IN WEIGHT, BALL-BEARING CONSTRUCTION THROUGHOUT**

The New Philadelphia Valve Co. reel is the finest reel built. It is compact, rugged, and light in weight. All parts are of steel, malleable iron, or bronze; no cast iron is used. It is ball-bearing throughout with hardened and ground races. (6 ball bearings are used.) It will never wear out.

The reel can be changed from top winding to bottom winding by reversing the hose connection and rotating the drum. All working parts and hose connections are in front and easily accessible. It is light in weight, a reel that holds 100 feet of 1½" hose, weighs only 93 pounds.

We can furnish hose reels in any size or shape. They can be furnished for installation either in bucket box at rear of truck or in underslung box on side of truck. Give inside dimensions of box when writing for information. Special reels can also be furnished for Airfield Refueling Pits and Ship Docks.

Delivery can generally be made in a few days after receipt of order. For sizes, prices, and dimensions, write for Catalogue No. 165.

**PHILADELPHIA VALVE COMPANY**
ARAMINGO AVENUE AND ONTARIO STREET, PHILADELPHIA 34, PA.

Oil Marketing Equipment Company, 321-325 Fremont Street, San Francisco 5, California

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## Stok-A-Fire Changes Name; Plans Oilburner Production

AUTOMATIC FIRING Corporation is the new name of the company that formerly was known as the Stok-A-Fire Co., St. Louis, stoker manufacturer. The change, according to Hugo Wurdack, president, was made to better describe the company's expanded line which is to include a full line of conversion oilburners and units and gasfired equipment.

In a letter announcing the change, Mr. Wurdack told the field that coal has been subject to a lot of bad publicity and consumers are turning to oil and gas. He cited the sales figures in St. Louis for the first 11 months of 1946 as indicative of the trend, and as a reason for enlarging the line to include oil and gasfired equipment.

## Renick & Mahoney Issues New Oil Equipment Catalog

CATALOG NO. 47, a new catalog of Renick & Mahoney, Inc., New York 6, has been issued under the title "Complete Equipment for the Oil Trade. The 96 page book contains a complete line of oil-handling equipment from hose fittings to bulk plants with descriptions and prices for all items.

Inside the front cover is a tribute to John F. Renick and Frank J. Mahoney, founders of the company twenty years ago, both of whom died in 1946. August Schramm is president.

## Geologists Expect New Oil Discoveries to Equal Old

GEOLOGISTS OF Standard Oil Company (New Jersey) are of the opinion that discoveries of new reserves of oil in this country alone will at least be equal to the vast quantities already discovered, Eugene Holman, president of the Jersey Company told a recent meeting of the American Petroleum Institute in Chicago.

## Rheem to Expand Plant

RHEEM MFG. COMPANY recently announced purchase of a 56-acre industrial site just north of its present Richmond, California, plant.

Commenting upon the acquisition, R. S. Rheem, president, stated: "The acquisition of this property will enable us to expand as fully as future conditions will require. We are still in the process of enlarging and modernizing our existing Richmond plant. Definite plans for developing the new site will await completion of this present program."

## Plan "X" Laboratories Plant and Line Expansion

PLANS ARE UNDER WAY for the enlargement of plant facilities and greatly increased production for "X" Laboratories, Inc., New York, according to E. R. Tolfree, president of the company. Plans also call for additions to the present line of products and a research laboratory has been established for the constant improvement of the line as well as development of new products.

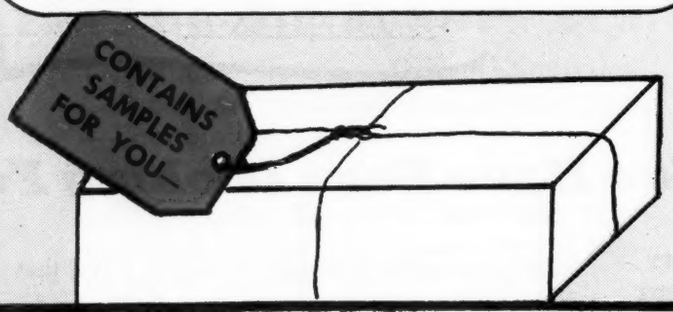
David L. Simpson recently has been appointed general manager in charge of all operations and C. R. Critchfield takes over plant operations. Parke H. Holton, who has been with "X" since 1934, continues in charge of sales in the plumbing and heating fields.

It has been announced that Manufacturers' Sales Agency will become exclusive distributors for all "X" products.


Representing

- GENERAL FUELOIL FILTERS
- SCHACHT OIL BURNER NOZZLES
- CLEAN SWEEP SOOT REMOVER

Large quantities of oil heating dealers, jobbers and manufacturers, give us substantial volume because they like these products BEST! If you do not now sell any of these products, perhaps it is because you have never really gotten to know them well enough. Here's your opportunity to quickly and easily get to know them. We have prepared special boxes that—




SEND FOR INFORMATION "SAMPLE BOX"

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Automatic Heat Devices

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WILLIAM J. DEBLER, SR. • NEWARK OFFICE
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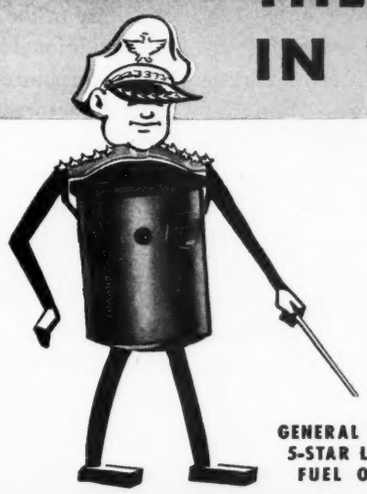
LOOK FOR MANUFACTURERS ADVERTISEMENTS FOR THESE PRODUCTS ON OTHER PAGES.

# General FUEL OIL FILTERS

## THE HOTTEST ITEM IN THE FUEL OIL BUSINESS



GENERAL FILTER IS THE 5-STAR LEADER IN THE FUEL OIL BUSINESS

**STANDARD MODEL 1A-25**
IDEAL FOR SMALL HOMES, SPACE HEATERS AND HOT WATER HEATERS

*Model 1A-25
4¾" High—3½" Dia.
Filter Unit Surface .31 Sq. In.
⅜" Pipe Openings

**MASTER MODEL 2A-700**
ADEQUATE CAPACITY FOR AVERAGE SIZE AND LARGE HOMES

Model 2A-700
6¼" High—4-5/16" Dia.
Filter Unit Surface 72 Sq. In.
⅜" Pipe Openings

**DELUXE MODEL 2A-300**
JUMBO SIZE FOR LARGE SYSTEMS AND DIRTY TANKS

*Model 2A-300
9-1/16" High—5½" Dia.
Filter Size 63 Cu. In.
⅜" Pipe Openings

## WHEREVER FUEL OIL IS USED INSTALL A General

Service companies from coast to coast are proving that General Fuel Oil Filters are the most needed and outstanding accessory ever offered in the fuel oil burner field. Every installation is a proven profit maker. Every installation means added, periodic revenue through cartridge replacements. Service companies and contractors further add that they save thousands of dollars each year by avoiding troublesome call-backs caused by clogged nozzles.

Not all the benefit and profit is on the contractor's side — the customer gets cleaner burning fuel and is not inconvenienced by shut-downs caused by clogged burners. These facts make General Filters easy to sell and easy to increase profits — a good reason to *install a General wherever fuel oil is used!*

*LISTED UNDER RE-EXAMINATION SERVICE OF UNDERWRITERS' LABORATORIES

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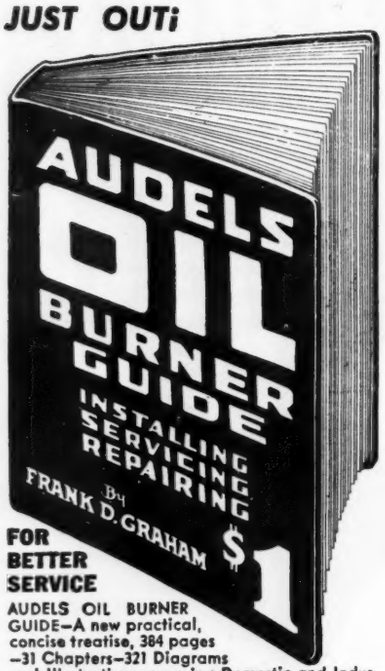
**JUST OUT!**




**FOR BETTER SERVICE**

**AUDELS OIL BURNER GUIDE**—A new practical, concise treatise, 384 pages—31 Chapters—321 Diagrams and Illustrations—covering Domestic and Industrial Oil Burners. New from Cover to Cover. Gives practical inside working knowledge of theory, construction, installation, operation, testing, servicing and repair of all types of oil burners. Includes electrical hook-ups and wiring diagrams of automatic control systems.

Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a handy form. Fully illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 days Free Examination.

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**Please send me postpaid for FREE EXAMINATION books marked (x) below. If I decide to keep them I agree to mail $1 in 7 Days on each book ordered and further mail $1 monthly on each book until I have paid price. Otherwise I will return them.**

- ☐ OIL BURNER GUIDE, 384 Pages . . . . . $1.
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- ☐ ELECTRIC LIBRARY, 12 vol., 7000 Pgs., $1.50 vol.

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Occupation_____

Employed by_____ O


### Delco Names City Branches

DELCO APPLIANCE DIV., General Motors Corp., Rochester, N. Y., has appointed City Ice & Fuel Co., with headquarters in Chicago, to handle the Delco-Heat line of automatic heating equipment through its branches in St. Louis, Detroit, Cleveland, and Columbus, according to M. L. Judd, sales manager of Delco.

The 53-year-old City company is claimed to be the largest enterprise of its kind in the country, doing an annual volume of more than $50,000,000 through 30 subsidiary companies manufacturing and distributing ice, ice machinery, refrigerators, appliances, coal, coke and fueloil. Delco equipment will be handled in connection with its fuel distributing business.

### Sid Harvey Extends Employee Stock Plan

SID HARVEY, INC., Valley Stream, N. Y., has expanded its plan whereby shares of preferred stock are issued to employees. The expansion of the plan now includes all employees who have been employed by the company for the year 1946. Of 179 employees, 125 will participate in the plan, with issues of stock ranging from a minimum of $100 to a maximum of $600.

### Boston Machine Takes Sale of Nozzle Wrench

BOSTON MACHINE WORKS CO., Lynn, Mass., has taken over the manufacture and sale of the Ideal nozzle wrench formerly handled by Torrisi Enterprises, Lawrence, Mass. This is a two handle wrench with which a nozzle may be removed from a burner without taking the assembly out of the draft tube. The wrench also is used in nozzle service to aid dismantling and reassembling. The company also has the Apthorp nozzle, Instant-Glo combustion chamber and Clearview tank gauge.

### Risselt Expands Valve Line

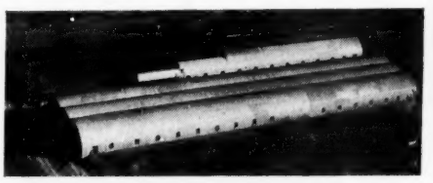
EXPANSION of the line of Risselt air eliminator valves manufactured by the Risselt Division of the Lodge & Shipley Company's Special Products Division was disclosed by the announcement of a companion valve for industry use and readily applicable to all steam processing. This industrial valve can be applied for high pressure heating up to and including 125 pounds pressure.

A dealer meeting and sales-merchandising conference for distributors of Risselt valves is being planned for February 6 and 7, at the Lodge & Shipley Special Products Division plant in Cincinnati.

### Quonset-Type Factory for Veteran Heating Units

FACED WITH a two-year delay in the construction of sorely-needed additional plant capacity, York-Shipley, Incorporated of York, Pennsylvania, manufacturers of oilfired equipment, is rushing to completion two huge Quonset-type manufacturing plants. These buildings have a combined working area of 60,000 sq. ft. and will provide immediate space for increased York-Shipley operations until a permanent factory can be built.

The principal function of these Quonset plants is the mass production of a packaged, oilfired winter air conditioning



unit (trade name, "Warmaire"), for use in veteran housing projects. Production of these units in the new plants is scheduled to begin March 1, 1947.

Lending themselves to speedy construction, the York-Shipley Quonset-style buildings have a triple dome, centrally supported by vertical steel members. The exterior consists of corrugated iron sheets on a steel-arch framework, insulated with a two-inch layer of rock wool and one layer of fiber board. The floors are of concrete.

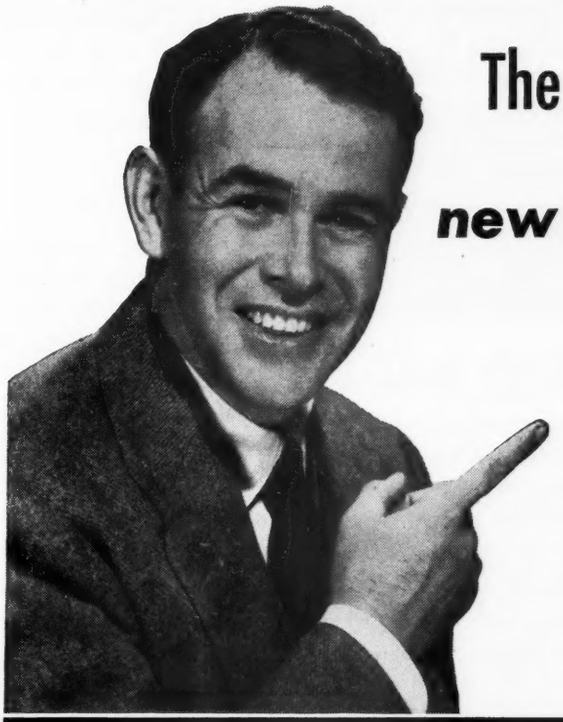
### U. S. Rad. Pays Dividend

DIRECTORS of United States Radiator Corporation declared a dividend from its net earnings of 75 cents per share on the preferred stock, paid February 1 to stock of record on the books of the corporation January 20.

### Stanolind Planning to Build Large Synthetic Oil Plant

STANOLIND OIL AND GAS COMPANY is currently engineering a large commercial-scale Synthol plant for the synthesis of oil from natural gas. Tentative plans are for the plant to be constructed in the huge Hugoton gas field of Kansas, which has

# Your Simple Step to EASIER SALES



## The National Radiator Company's *new training* in "HEATING SALESMANSHIP"

If you are in any way concerned with the sale or installation of heating equipment, you will find in this new training a simple, practical way to help you make more money.

**HEATING SALESMANSHIP**

—available to you at a fraction of its real value, because National spent thousands of dollars to prepare it—in cooperation with La Salle Extension University. It's written in *your* language, about *your* business—HEATING—and you can easily apply its fundamentals to the more effective selling of *all* your products and services.

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Please send, without obligation on my part, the complete details of the new National Radiator-La Salle training in Heating Salesmanship.

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fueloil & oil heat

total estimated reserves of 23 trillion cubic feet and is the largest gas field in the United States. About 100,000,000 cubic feet per day of gas will be processed, yielding approximately 6,000 barrels per day of high-quality gasoline and 1,000 barrels of distillate fuels.

The Hugoton plant is being designed to process low-heating-value gas currently unsuited for fuel. In the process the feed gas is burned under 300 pounds pressure with relatively pure oxygen to yield synthesis gas with a composition controlled to within narrow limits. For each 15,000 cubic feet of gas charged to the plant, one barrel of crude synthetic oil and substantial amounts of oxygenated compounds (including alcohols, ketones, aldehydes and acids) are produced. The recovery and treatment of the hydrocarbon products for market would be accomplished by conventional refinery methods.

◈

*Frank C. Kurung,* assistant manager of General Electric's Control Division, has been made assistant manager of Manufacturing of the Air Conditioning Department at Bloomfield, N. J.

## Issue Sixth Edition of Standard Heating Text

A SIXTH EDITION of the well known textbook, Heating and Air Conditioning by Allen and Walker, has been issued with John W. James, formerly with the American Society of Heating & Ventilating Engineers and now research engineer for Iron Fireman Mfg. Company, as coauthor. The book is intended not only as a textbook for engineering schools, but also for the individual who wishes to study by himself.

A new section on panel heating has been added to the book, and the chapter on Fuels and Boilers has been extensively revised to include flue gas efficiency charts for coal, gas and oilfiring. Also, reverse-cycle refrigeration has been covered from a theoretical and practical standpoint. Material on warm air heating and air conditioning has been revised to include the latest rating formulas and design proceduces. A number of changes have been made in the Hot Water Heating chapter to give more up-to-date information on the design of small forced-circulation systems. Material on cooling has been completely rewritten to simplify the presentation.

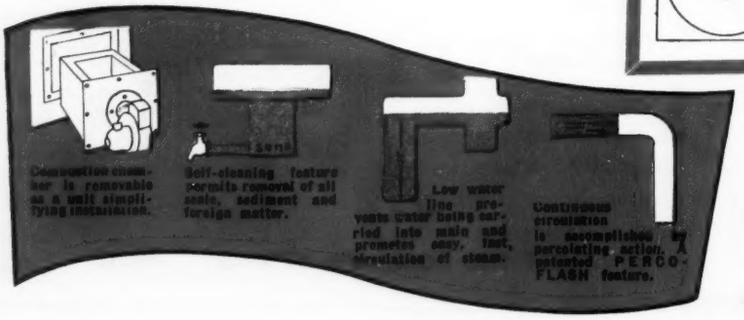
Heating and Air Conditioning, published by McGraw-Hill Book Co., New York, contains 660 pages. The book is 6 x 9 inches, is bound in cloth, and sells for $4.05.

◈

*General Electric's* "The Answer Book on Home Heating" presents an informative picture of what goes on in the processes of heating and air conditioning. Separate sections discuss and illustrate the kind of equipment needed, the benefits of automatic heat, weatherproofing of the home, radiators, convectors and grilles. Succeeding sections illustrate and explain the different types of steam, hot water and warm air heating systems. The booklet, all of which is written for and directed at the homeowner, includes also a discussion on summer cooling. The last portion of the booklet explains the application of GE equipment to various home heating and cooling needs.


TO DISCOVER
*Sound Engineering in Boiler Design...*
LOOK INTO PERCOFLASH!

**In its unique, scientifically correct percolating principle of design, you'll find one of many reasons for the amazing performance of the PERCOFLASH Boiler. Its sound engineering has brought boiler heating to a vastly higher plane of efficiency because of its instantaneous generation of steam and hot water. No matter what your customer's preference, whether coal, gas or oil, you can now assure him lowest possible operating cost. Before you decide on the boiler to offer your trade, we suggest you look *first* into PERCOFLASH. Write today.**


Combustion chamber is removable as a unit simplifying installation.
Self-cleaning feature permits removal of all scale, sediment and foreign matter.
Low water line prevents water being carried into main and promotes easy, fast, circulation of steam.
Continuous circulation is accomplished by percolating action, patented PERCOFLASH feature.

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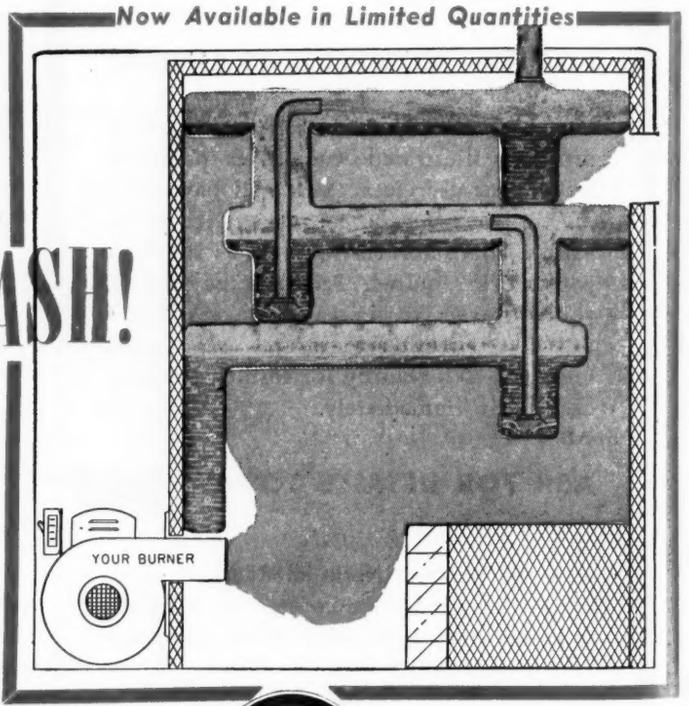


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THE FLASH ACTION BOILER WITH THE PERCOLATING ACTION

*Westcott - Alexander, Inc.*
*DISTRIBUTORS. MADISON, NEW JERSEY*

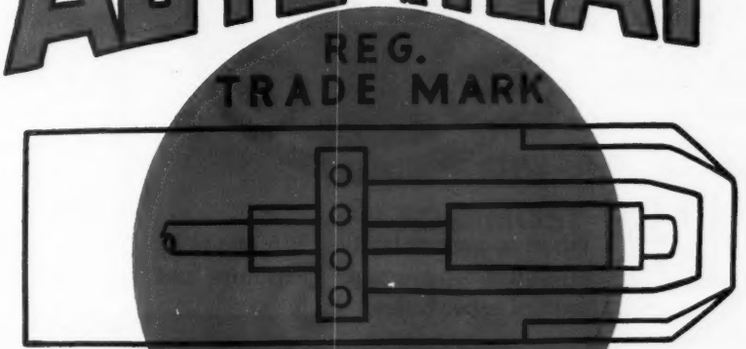
# CAN YOU TOP THIS?

## HERE IS AN ACTUAL ON-THE-JOB ANALYSIS OF THE NEW AUTO-HEAT FIRE-BALL BURNER.

| OIL FIRING RATE G. P. H. | | STACK DRAFT | STACK TEMP. | STATIC PRESS. | % | CHARACTER | SMOKE | SMOKE |
|---|---|---|---|---|---|---|---|---|
| nozzle rating | actual rate | in. of water | °F | in. of water | $CO_2$ | OF FLAME | RATING (shell) | TEST |
| 2.00 | 1.84 | | 345 | | 14.4 | | 0+ | |
| remarks | | | | | | | | |

## *Now Is A Good Time To Revive A Forgotten Sales Technique*

## *The New* AUTO-HEAT REG. TRADE MARK FIRE-BALL



## *with the patented Combustion Head, under license from the Shell Dev. Co., is the burner that CAN be sold on performance*

The soot-free, smoke-free ball flame is achieved through the revolutionary design of the shell combustion head, which provides perfect carburation with a minimum of excess air —the ultimate in fuel oil combustion!

***Inquiries are welcomed from good distributors and dealers.***

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**311 W. 66th ST. NEW YORK 23, N. Y.**

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***"For 20 years—the best in oilheating"***

THE AUTO-HEAT FIRE-BALL
WILL SOON BE STANDARD ON THE FAMOUS
Auto-Heat Conversion Burners
UP TO 2 GAL. PER HR.
ON THE
AUTO-HEAT ALL STEEL
BOILER-BURNER UNITS
AND ON THE
AUTO-HEAT Double-Duty
AIR CONDITIONERS

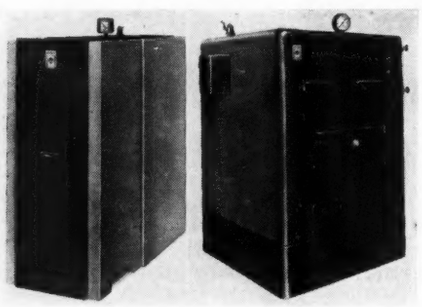
fueloil & oil heat

# New Products

## Two New American Boilers Are Designed for Oilfiring

THE ARCOLINER BOILER (Wet Base) and the Exbrook Boiler, two new boilers for steam or water, have just been announced by the American Radiator & Standard Sanitary Corporation. The Arcoliner, exclusively for oilfiring, was designed to meet the need of small homes for better automatic heating at moderate cost and upkeep. The new boiler is made in sizes rated from 260 to 520 sq. ft. steam, installed radiation. The Arcoliner is a "wet base" boiler, with waterways extending around and underneath the fire box. This type of construction permits safe installation in utility rooms or other first floor locations.

Two-pass flues with multi-finned water tube surfaces extract extra heat from the hot gases, adding to economy. The Arcoliner is available with built-in tank or



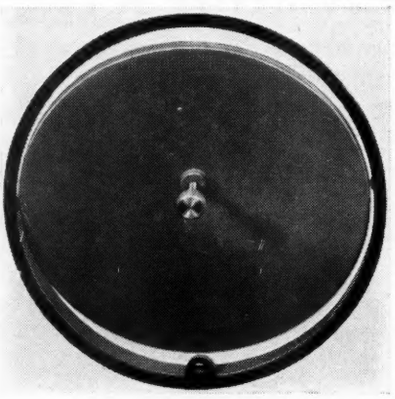
tankless type heater for year 'round domestic hot water supply. The insulated metal jacket of the Arcoliner is finished in rich Two-Tone Canyon Red.

The Exbrook, for oil or stoker firing, is a new boiler developed for larger-than-average homes, and commercial buildings. Rated in sizes from 775 to 1650 sq. ft. steam, installed radiation, the Exbrook oilfired model can be had with tank or tankless type built-in equipment for year 'round domestic hot water supply, and the stoker model can be had with tank type equipment for hot water during the heating season.

## Krueger Sentry Has New Draft Regulator

A DRAFT REGULATOR now has been added to the line of the Krueger Sentry Gauge Co., Green Bay, Wis., manufacturer of tank gauges. It is being marketed under the name "Sentry."

The new draft control is of the balanced type with bearings of non-corrosive



metals to prevent binding. It is said to be of sturdy construction, inexpensive and finished in two colors.

## Mills Conditioner for Oilfiring or Gasfiring

MODEL G-O, a new winter air conditioning unit announced by the Mills Air Conditioning Co., Verona, N. J., is the company's first post-war product since the complete shut-down due to the war. It is built with a heat exchanger of ingot iron, which is claimed to resist climatic conditions better than steel, and conduct heat 14% faster than ordinary steel, and 23% faster than cast iron.

The heat exchanger is fitted with vertical fins which are claimed to give additional heating surface and also act as air guides for better distribution of air in the bonnet. A horizontal deflector keeps the flue outlet surrounded by air, which tends to lower stack temperature.

The capacity range is from 50,000 to 110,000 Btu and the blower capacity is 1200 cfm. Two 16 x 25 in. filters are used. When supplied with burner the unit is equipped with a Rotoflame, but can be supplied for firing with any pressure type oilburner.

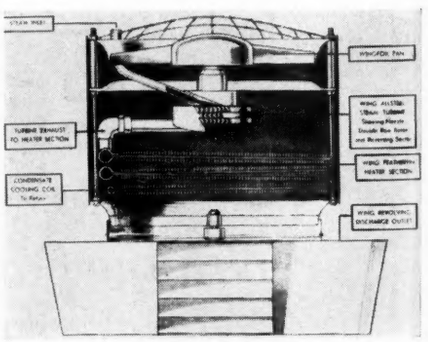
## Thermostatic Draft Control Announced by Atlas Utilities

A DRAFT REGULATOR actuated by a bimetal coil has been announced by Atlas Utilities Co., Providence 3, R. I. Heat in stack gases open the damper to admit basement air to the flue as the temperature rises, and the damper is closed as the heat in the flue decreases.

This "Atlas Fuel Saver" is mounted on the top of horizontal flue runs, or can be installed on vertical pipe runs. A weight serves as a counter-balance to the moveable damper plate, allowing it to move easily as temperature changes. Stops which can be adjusted to conditions on each job regulate the maximum opening of the damper.

## Steam Turbine Fan In Wing Unit Heater

A WELCOME DEVELOPMENT in view of the electric motor situation is the introduction of the Wing Turbine Revolving Unit Heater by L. J. Wing Mfg. Co., New York. In this, the fan is driven by a compact Wing all-steel steam turbine. The turbine exhaust passes into the heater section where it is used to heat the air which the turbine-driven fan then delivers



through the Wing revolving discharge outlets to the working level below. Condensate, which is never at a higher temperature than 170° F. is returned to the boiler through an open return system. The advantages claimed are elimination of electric motor and electric power, no back pressure, no packing, no traps.

## Crotty Announced Small Oilfired Heat Generator

TO MEET THE DEMAND for a low cost boiler for small homes, Crotty Mfg. Corp., Flushing, N. Y., has announced the steel VR-18 Heat Generator, rated at 300 sq. ft. of steam. The new unit, as well as the

# "SMOKE DOCTORS"

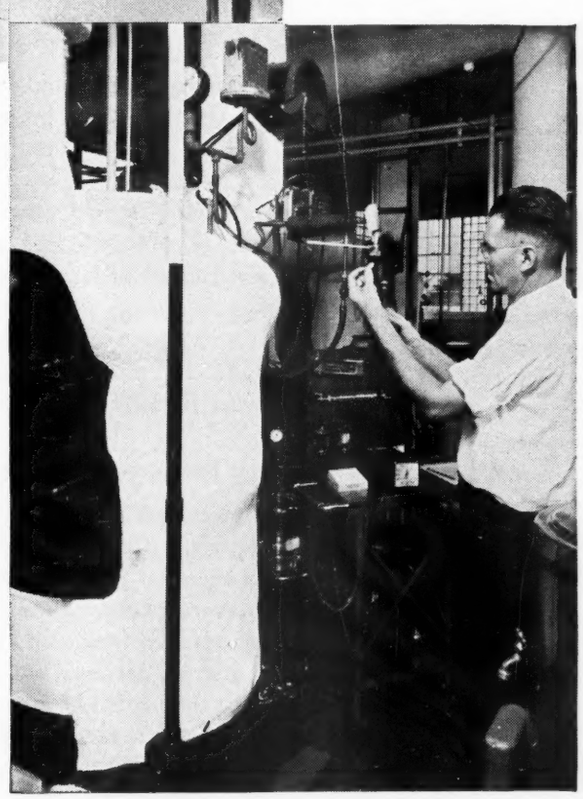
## OPERATE AT AMERICA'S FOREMOST HEATING OIL CLINIC

ONE BRANCH of Shell Research is made up of "Smoke Doctors"—a group of scientists who fight smoke and soot as M.D.'s fight disease.

When the Smoke Doctors began their work 16 years ago, domestic heating oil was "something left over" when gasoline was refined. It was up to the burner manufacturer to make his burner perform on whatever "left-over" he got.

The Smoke Doctors took a different view: Their mission in life was to get heating oil—not Shell's alone, but also that of other refiners—made with the same care and precision as motor fuel . . . and to help burner manufacturers improve their equipment.

**Their success in this missionary work** has helped *your* customers get convenient, comfortable, and above all, *clean* heat. For further details, ask your local Shell Fuel Oil Representative.



**Using the Shell Smoke Meter to measure soot content**

SHELL

**SHELL OIL COMPANY**
**INCORPORATED**

fueloil & oil heat

"S" series announced earlier, is made with built-in instantaneous hot water coil and extended jackets in a variety of colors.

In the S series, the company also has added the S-36, rated at 600 sq. ft. of steam, making for sized in this series of domestic boilers. All are claimed to be easy to clean, compact and efficient.

## Broco Uniflare Fittings For All Types of Tubing

DEVELOPMENT OF A new two-piece, self-flaring tube fitting, which may be applied to many varieties of tubing, is announced by the Brockway Co., Naugatuck, Conn.

The new fitting, known as the Uniflare, embodies advantages of both compression fittings and flared fittings. It may be used effectively with tubing of various metals within a wide range of wall thickness.

Plain end tubing is inserted in the fitting and made up in the conventional manner. The tube is self-extruded and self-flared by simple wrench action during

the makeup. The fitting is so designed that the nut, body and thrust collar combine to produce the same smooth positive action as an extrusion press—the thrust collar shearing from the nut when wrench pressure is applied.

Uniflare is made in sizes from 1/8 inch to 3/4 inch, in all the usual commercial shapes.

## Soldering Flux in Stick

LAKE CHEMICAL CO., Chicago 12, has announced a new Flux Stik to eliminate waste and permit just enough flux for the joint. In stick form, the soldering flux is always ready to use.

Flux-Stik is non-acid, yet it dissolves the oxides of metals and prepares a free and clean surface for the solder to alloy itself firmly with the metal. No cleaning of the metal is necessary. It is non-running and can be applied equally well either to hot or cold metal. When heat is applied, the flux will just cover the immediate vicinity of the soldering joint. It will not spread itself all over the surface of the metal, thus keeping it clean and free both from wasted fluxing material and solder.

## Cam-Stat Room Thermostat

COMPACT AND SMARTLY FINISHED, model CD109A room thermostat, introduced by CAM-Stat, Inc., Los Angeles, Cal., extends less than an inch from the wall and is installed to any conventional conduit box. Current carrying capacity is 1500 volt-amps, 1/2 hp, and 125 volt-amps pilot duty at 120 through 240 volts A.C. Range is standard at 50-100° F, with a differential of 2-3° F. As a safety feature, the bakelite housing behind the wall plate encloses all current carrying parts.

## Standardized Electric Motors

A NEW LINE of standardized electric motors is offered by Eastern Air Devices, Inc., Brooklyn 17, N. Y. The motors incorporate improvements in noise reduction and bearing lubrication, recommended for use in small appliances, air circulators, fans and blowers. End covers are die cast and mounting faces precision machined to permit gear trains to be run directly from the motor shaft. Capacities range from 1/500 to 1/15 hp, 115 volts, 60 cycles.

## R & I Moldit Chrome Refractory Cement

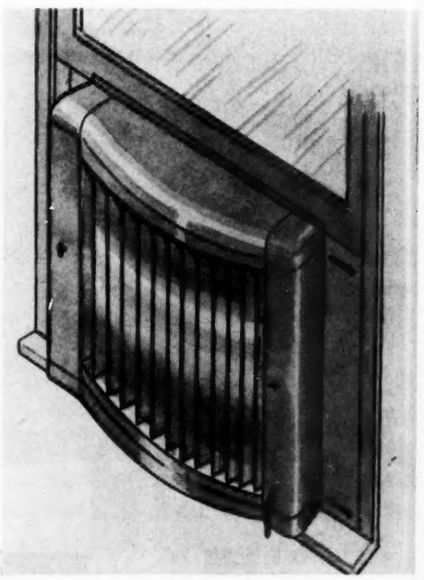
A CHROME BASE castable high temperature refractory, offered by Refractory & Insulation Corp., New York 5, N. Y., can be poured into any shape or form and does not need to be pounded or rammed. The cement is furnished in dry form, is mixed with 5 qts. of clean water with each 100 lb. bag and weighs approximately 160 lbs. per cu. ft. molded in place. The cement, which has a melting point of 3100° F., may be sprayed, washed or submerged in water without disintegration. It is resistant to slag, molten metal and abrasion.

## Boiler Tube Expander

THE DUDGEON SPECIAL ARCH TUBE EXPANDER is designed to permit fast repairs where boiler construction makes the tube inaccessible for ordinary retubing methods. The expander enters the smoke box, or fire door, and reaches through the whole length of the tube to roll the far end. A revolving stop collar on the frame extension permits adjustment for various lengths of tubes. Expander and mandrel are furnished with a solid frame shank, or in two parts.

## Palmer Offers New Evaporative Cooler Model

PALMER MFG. CORP., Phoenix, Ariz., makers of the "Sno-Breze" evaporative cooler, has announced immediate production of a new model window type cooler with metal fill-ins to fit any window adjustable from 24 to 34 1/2 ins. Adjustable



directional louvres, motor and water switches placed on the front of the cooler, provides complete control of operation from within the room.

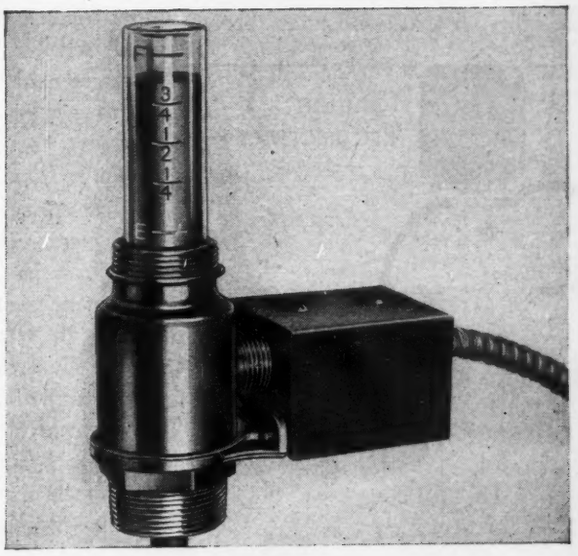
The cabinet is of 22 gauge, rust resistant steel. Other features include: recessed fan orifice prevents all air loss or recirculation, Sno-Fluf cooling pad of pure, odorless aspen, and quiet efficient 16" fan powered by 1/25 h.p. motor that requires oiling only once during the season.

## Aerotec Pressure Switches

AEROTEC CO., through its national distributors, Thermix Corp., Greenwich, Conn., announces a line of pressure switches for control of automatically fired steam boilers. Pressure range on the H-701 switch, first in a series, is from 1 to 10 lbs., with a differential of from 1 to 5 lbs. Also available are ranges up to 300 lbs., differentials from 1 to 80 lbs., with Micro-Switch contact arrangements of normally off and on. Accurately calibrated scales for range and differential permit fingertip settings.

# CONSUMERS SERVICE MEN DRIVERS

# —ALL AGREE ON DIXON CUT-OFF OIL GAUGES . . .




- **Mrs. Typical Consumer Says:** "I never have to worry about my oil burner now. I know how much oil is in the tank so I don't send out false alarms. That gadget on the Dixon Gauge turns off the burner so the service man never has to come prime it, and I get heat as soon as the tank is filled."

- **Mr. Typical Service Man Says:** "With Dixon Gauges I get no service calls for pump priming, clogged nozzles, or clogged filters due to empty tanks. I'm a good mechanic and I like good workmanship and design as I see it in the Dixon Gauge."

- **Mr. Typical Driver Says:** "My customers know where they are with Dixon Gauges and I know that I am not out at midnight trying to fill a tank that was half full anyway. My calls are friendly calls when we use the Dixon Gauge."

Precision made, engineered for reliability and accuracy, Dixon Gauges will pay for themselves and maintain long term customer goodwill.

***Send for descriptive literature and prices.***

## RIDE THE GOOD-WILL LANDSLIDE WITH THE DIXON OIL GAUGE

1. Eliminates Priming
2. Reduces Dirty Strainers
3. Reduces Plugged Nozzles
4. Eliminates Repeat Service Calls
5. Eliminates Mistaken Accusations of Dirty Oil
6. Insures Immediate Heat Upon Filling Oil Tank
7. Insures Larger Oil Deliveries Per Unit
8. Avoids Necessity of Re-Routing Trucks for Special Deliveries
9. Supplements Degree-Day Schedule in off season
10. Prevents Emergency Calls Due To Inaccurate Gauge Indications

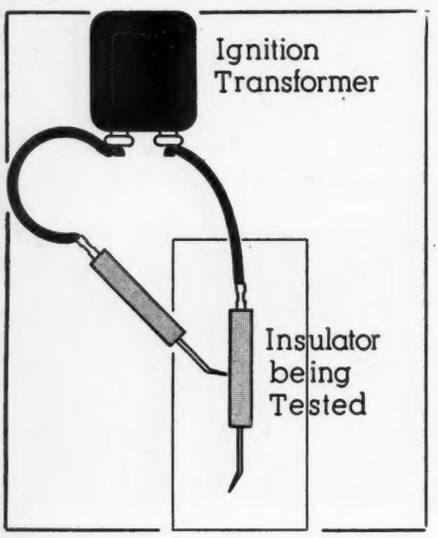
**DIXON OIL GAUGE DIVISION,** NEW YORK AIR VALVE CORP.
**611 BROADWAY, NEW YORK 12, N. Y.**

# Everyday Snags

## Testing Ignition Insulators

Because of the electrode holders in certain burners tend to crack the porcelain insulators which support the electrodes, servicemen should know how to test for small cracks in the insulators. Cracks almost invisible to the naked eye sometimes cause delayed ignition or ignition failure.

To test an insulator, connect two electrode assemblies to an ignition transformer as the drawing shows. Turn on the transformer and run the spark point of one electrode over the porcelain insulator of the other. A spark will jump through




any small crack. Don't be unfair to the insulator being tested or ruin it by testing within about three-quarters of an inch of the metal at the ends of it. That can be expected to cause sparking; prolong such sparking and you may damage the insulator. Don't test a skirted insulator at its skirt; test it only close to the area which should be in contact with the electrode support.

Easily made on the job, this test is needed mainly for old, discolored or dirty porcelain insulators which are suspected of having minute cracks.

* * *

## Close Control of Heat

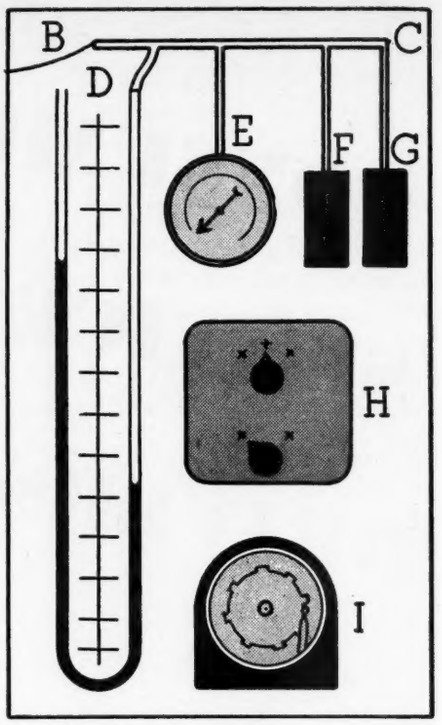
Ten years ago 60,000 gallons of oil were used yearly to heat a certain large building, and to control the heat the superintendent climbed a ladder to the top of the boiler and changed the setting of a vacuum-pressure control. Today the building is heated better on 30% less oil, thanks to the heat control equipment shown in the diagram. B is a ¼" OD copper tube line, carefully installed and properly sloped, which runs from the boiler to an instrument and control panel in the superintendent's office, some 35 feet distant. B-C is the tee-equipped ¼" brass pipe header across the top of the panel. D is a special water-filled U-tube manometer six feet high, used to indicate with extreme accuracy and dependability the pressure on the boiler, and suitable for up to two pounds pressure, the maximum used on the system. E is the largest pressure gauge, calibrated in ounces, which was readily obtainable. F and G are two steam pressure controls of unusually great accuracy and sensitivity. The settings can be changed easily and quickly; usually one is set to open between three and eight ounces pressure, the other between one and two pounds. These settings often are changed.

The special large building automatic heat control panel is labelled H. The upper knob had three positions: heat off; automatic control; steam pressure operation of the burner on control F or G. The lower knob connects pressure control F or G to the burner either for usual automatic control of the heat or for steam pressure operation, according to the setting of the upper knob.

The superintendent's insistence on having the permanently-installed on-off recorder labelled I was caused by his watching the engineers who used a portable on-off recorder to adjust and check on the operation of the large building heat control panel (H). This permanently-installed on-off recorder is driven by a Telechron clock and is arranged so that one chart bears seven days' records. The recorder needle is shifted manually from one slot to another daily for seven days.

A distant reading thermometer, not shown in the drawing, conveniently reports the outside temperature to the superintendent without his having to budge from his desk.

What, no $CO_2$ indicator or recorder? No. Up to now this has not been considered necessary for the automatic oil-burner; nor have permanently-installed draft gauges and a stack thermometer been considered necessary. Provisions have been made, however, for taking combustion test readings in a few seconds. Test openings fitted with plugs are on the firing door and smokehood of the boiler. For




convenience in taking $CO_2$ and smokehood draft readings, a 5/16" copper tube runs from the smokehood to within five feet of the boiler room floor. Complete combustion tests for draft, stack temperature, and carbon dioxide, oxygen, and carbon monoxide are taken and recorded twice a month. Assisted by the heating engineer who planned the other instruments, the superintendent soon will install some easily-seen device to tell him if the fire is giving any smoke.

* * *

## Bolting Down Burners

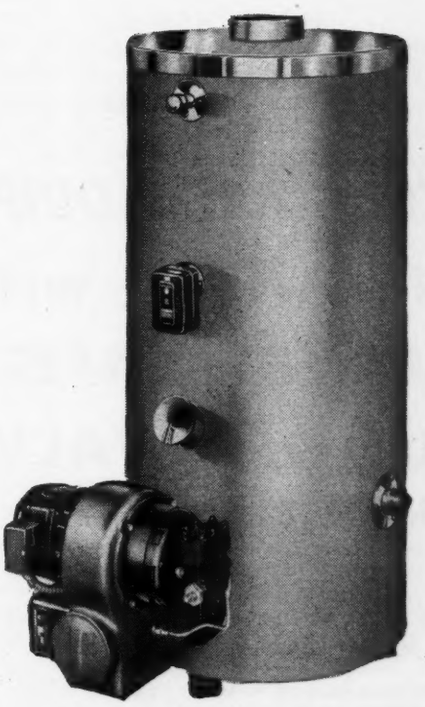
The bases of many gun burners have bolt holes to permit fastening the burners to basement floors. Some burner dealers bolt down the burners they install, others do not. According to one dealer, a burner should not be bolted down unless a local inspector or local ordinance makes this necessary. He demonstrated recently that by shifting slightly a burner which is not bolted down the amount of sound that can be heard upstairs can be changed appreciably on certain installations. Burners which are not bolted down, he declares, are held in place with the proper rigidity by the firebox, oil lines, and electric connections. Also, he points out, a burner not bolted down often can be made quieter by slipping pieces of cork, Neoprene, or rubber under it to reduce the transmission of sound and vibration to the basement floor.

Your selling becomes easier when you put these three ABC salesmen to work for you. ABC Quality, Economy and Experience have helped dealers make more sales with less effort for over a quarter of a century. Helped build dealer reputations in every community. Let these ABC salesmen help you build your business. Write for distributorship details now.

ABC Oil Burner

**ABC PRESSURE BURNER**

Incorporates such exclusive ABC advantages as: Governoil Nozzle for improved spin, decreased friction, and pressure loss; Special Coupling that eliminates end-thrust and binding due to end thrust. Quieter, more efficient, more economical operation.



**MATCHED WATER HEATER UNITS**

Water Heater and Oil Burner are matched to afford top efficiency and economy in operation. Also provides easier installation. An ABC advantage that makes for easier sales, more satisfied customers.

# AUTOMATIC BURNER CORPORATION

1823 CARROLL AVENUE, CHICAGO 12, ILLINOIS

# Catalogue of Oilburner Manufacturers

*This is the second installment of the Catalog of Oilburner Manufacturers, the first part of which was run in the November, 1946, issue.*

**Fairhurst Products Mfg. Co.**
*300 State St., Cedar Falls, Iowa.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: BEST-A-MATIC. Estab. 1932; *p* and *gm*, D. L. Fairhurst, Sr.; *s* and *t*, Mrs. D. L. Fairhurst.

**Fano-Flame Oil Burner Co.**
*3323 Olive St., Huntington Park, Calif.*
Low and high pressure gun burners, domestic and industrial; vaporizing forced draft burners; oilfired commercial ranges; vaporizing water heaters; trade name: FANO-FLAME. Estab. 1916; August Behrsin, owner.

**Faultless Oil Burner Co.**
*113-29 Farmers Blvd., St. Albans 12, N. Y.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; boiler-burner units (steam generator type); trade name: FAULTLESS. A. R. Haase, owner.

**Fire Power Products Corp.**
*11 South LaSalle St., Chicago, Ill.*
High pressure gun burners; boiler-burner units w/high pressure gun burners. Estab. 1946; *p*, A. E. Bottenfield; *vp*, W. G. Schalscha; *t*, G. L. Reed; *ce*, L. W. Hemingway.

**Fluid Heat Division, Anchor Post Products, Inc.**
*6500 Eastern Ave., Baltimore 24, Md.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; vertical rotary domestic burners; trade name: FLUID HEAT. Estab. 1892; *p*, W. F. Brannan; *vp* and *ce*, T. H. Smoot; *s*, G. B. Ferris; *t*, C. W. Burton, *sm* and *am*, M. J. Donahue.

**Fuel Savers Incorporated**
*15th & Herr Sts., Harrisburg, Penna.*
High pressure gun burners; trade name: FUEL SAVERS. Estab. 1926; *p*, E. T. Selig; *s*, H. J. Selig.

**General Heat & Air Engineers**
*4608 Emerson Ave., S., Minneapolis, Minn.*
High pressure gun burners; trade name: REDI HEET. Estab. 1924; John P. Samels and N. A. Zimmerman, partners.

**General Oil Burner Corp.**
*2300 Sinclair Ave., Baltimore, Md.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure burners; horizontal rotary industrial burners; trade name: GENERAL AUTOMATIC. Estab. 1923; *p*, C. W. Schaefer; *vp*, C. E. Birch; *s*, Julian Greene; *t*, R. E. Lee; *gm*, Robert E. Lee; *sm*, Ward Hamill; *ce*, Richard E. Nest; *am*, Harry Buddemeir.

**General Oil Heating Corp.**
*322-326—55th St., West New York, N. J.*
High pressure gun burners, domestic and industrial; boiler-burner units w/high pressure gun burners; trade names: GENOCO, CARTER, UNITHERM, CYCLO-FLAME. Estab. 1925; *p*, *gm* and *t*, William D. Brooks; *vp*, M. A. Brooks; *s*, Peggy E. Brooks; *ce*, Herman Balton.

**Gilbert & Barker Mfg. Co.**
*Cold Spring Ave., West Springfield, Mass.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; horizontal rotary industrial burners; gun type water heaters; trade


**STOP "AFTER DRIP" INSTANTLY with HARVEY SAFETY CUT-OFF VALVE**

ACTUAL SIZE

WITH DOUBLE QUICK SHUT-OFF

Specifications: Opens 83 lbs., closes 76 lbs. 1/4" FPT on each end. Length overall 2 1/8".

**Why at Least One in Every Service Kit . . .**

You can correct dangerous "after drip" on any pressure type burner on the job, at once. No need to chase back to the shop for a rush replacement with a "no heat" customer on your neck. Install a Harvey Safety Cut-Off Valve in a few minutes, leave your customer safe and with heat. Then you can make a permanent replacement when it suits you.

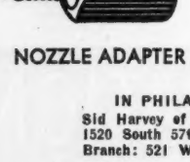
***And what's more, you can:***

1. Reduce shut-off Pulsations on jobs with critical draft conditions.
2. Reduce soot on normal shut-off.
3. Eliminate "after drip" caused by air in line (when installed at nozzle with adapter shown at left).
4. Give Double Protection against oil leaking into the combustion chamber when the burner is off, on even good jobs.

NO INCREASE IN PRICE

Price Each $3.25 to the Trade only

Lots of 6 to 11 $3.10 each
Lots of 12 to 24 $2.95 each
Nozzle adapter $.30 each in any quantity



NOZZLE ADAPTER

INSTALL ANYWHERE IN NOZZLE LINE

The Harvey Safety Cut-Off Valve can be installed at any convenient place between the nozzle outlet on the pump and the nozzle itself. It operates perfectly in any position—horizontal—vertical or on an angle. The Special Nozzle Adapter is used when the Harvey Safety Cut-Off Valve is installed immediately behind the nozzle. (Overall length of Valve and Adapter is 3".)

IN PHILADELPHIA
Sid Harvey of Pa., Inc.
1520 South 57th Street (43)
Branch: 521 W. Lindley Ave.

IN BOSTON
Sid Harvey of Mass., Inc.
566 Cambridge Street
(Allston Station)

IN NEWARK
Sid Harvey of N. J., Inc.
103 Lindsley Avenue

SID HARVEY INC.
VALLEY STREAM, NEW YORK

# A Check List of Oilheating Information

**1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL**

Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size .....50c
(Bulk purchase prices on request.)

**"Oilburner Combustion Chambers."** Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages .....50c

**"Degree Day Handbook."** Useful for computing oil consumption by the degree day method .....$3.00

**REDUCING FUEL OIL BILLS**

This booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service .....50c

**KNOWING THE A TO Z OF $CO_2$**

This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high $CO_2$ rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work .....$1.00

**Beacon Radiation Reference Book and Heat Loss Guide.** Gives right answers quickly. Pocket size. 175 tables show steam and hot water radiation required for every room from 5′ x 5′ to 20′ x 30′ at all normal ceiling heights, and with all corrections and qualifications needed for practical use. Price .....$3.00

**"Short Cuts to Heat Loss Data."** When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring 25c

**"Basic Service Text for Pressure Type Burners."** This manual has been prepared by G. T. Kaufman, technical secretary of the Oil Heat Institute of America, and is intended for basic training of installers and service men in residential oilheating. It is also a useful reference source for those who have completed the training courses. Chapter heatings include: Oilheating, Oilburner Installation, Tanks and Piping, Pumps-Valves-Strainers, Fans, Nozzles, Motors, Transformers, Ignition Systems, Controls, Boilers, Gravity and Forced Warm Air, Heating Load, Water Heating, Combustion Chambers, Chimneys and Draft, Testing Efficiency, Maintenance, Service Procedures. A good, elementary book. Quiz questions given after each chapter. Pocket size. 216 pages. Paper cover .....$2.00

**"Showdown; Oil vs. Gas Cost."** Here in a 4-page booklet is the unbiased story of just what a group of bill-weary consumers found out about gas heating costs, and why many of them have switched to oil .....Price 25c

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**"Operating the Automatic Delivery System."** Operation and refinements of a simple card system which tells to the day when a customer needs oil. Based on degree days. Organizes work of men and trucks .....50c each

**"BETTER OILHEATING" 2nd Edition . . . Enlarged**

There are 110 text pages and nearly 140 illustrations besides many tables and charts and short service hints. Bound in heavy paper. 8½" x 11". Covers trouble-shooting, field repair and efficiency testing to save oil. Valuable book for individual study or supplementary text for service schools. For all dealers, service and installation men. Many topics cover: fireboxes, draft, wiring, motors, controls, nozzles, pumps, baffles, efficiency, heating, etc. ..... $2.00

**MISCELLANEOUS REPRINTS**

**"Servicing One Pipe Steam Systems"**—4 pages of practical hints on radiator air valves, boiler accessories, balancing systems, etc. ....25c

**"Profits Mandatory"** — An analysis of company operations in the house insulating business .....10c

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**"The Degree Day—What It Is and How To Use It"** .....10c

**"Complete Burner Service Includes Precautions Against Trouble"**—This is extremely valuable in planning service business .....10c

**"Block That Loss"** — Discusses firing rates under wartime conditions .....5c

**1946-47 Catalog of Oil Burner Manufacturers.** 350 names of manufacturers of all types domestic, industrial, and commercial conversion burners, boiler and furnace burner units, space heaters, cooking equipment, water heaters, etc. Also 400 trade names. Gives location of company, names of principal executives, and list of products (not specifications). 20 pages, 7" x 10". All paper. No covers. Price .....$2

**"Consumers Talk About Fuel"**—a 12-page report on what reporters for FUELOIL & OIL HEAT learned by discussing fuel preferences and opinions with 1,438 families in 20 selected cities .....25c

**"Tomorrow's Fuel in Today's Burners"**—Useful 4-page technical discussion. With heavier distillates ahead, burners can be adapted—25c.

**Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.**

**FUELOIL & OIL HEAT • 232 MADISON AVENUE NEW YORK CITY 16, N. Y.**

name: GILBARCO. Estab. 1865; *p* and *gm*, Stanley C. Hope; *vp*, Terrence C. O'Donnell; *vp* and *t*, Phillip H. Bills; *s*, Edward A. Sundburg; *sm*, W. C. Leitch; *ce*, Herman O. Grimmeisen; *am*, Raymond B. White.

**Gold Star Oil Burner Mfg. Co., Inc.**
*146-150 Warburton Ave., Yonkers, N. Y.*
Low pressure gun burners; trade name: GOLD STAR. Estab. 1932; *p*, Felix Sposito, Sr.; *vp*, Felix Sposito, Jr.; *s*, R. M. Sposito; *t*, Joseph Sposito.

**Gould Oil Burner Co.**
*316 Meridian St., E. Boston, Mass.*
High pressure gun burners; gun type water heaters; trade name: GOULD. Estab. 1941; L. D'Allesandro, owner.

**Granite State Oil Burners**
*1544 Belmont St., Manchester, N. H.*
High pressure gun burners, domestic and industrial; trade name: GRANITE STATE. Estab. 1932; W. J. McCauley, owner.

**A. Greene Mfg. Co.**
*3950 N. Broad St., Philadelphia, Pa.*
High pressure gun burners; trade name: EVEN HEET. Estab. 1944; A. Greene, owner.

**Greene & Hodgson, Inc.**
*61 Alhambra Circle, Providence 5, R. I.*
High pressure gun burners. Estab 1938; *p*, George W. Hodgson; *s* and *t*, B. B. Hodgson.

**Greenwood Engineering Co., Inc.**
*1023-25 Ridgely St., Baltimore 30, Md.*
High pressure gun burners; trade name: GREENWOOD. Estab. 1933; *p*, H. B. Greenwood; *s* and *t*, W. G. Greenwood.

**Hall-Neal Furnace Co.**
*1324 North Capitol Ave., Indianapolis, Ind.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: HALL-NEAL VICTOR. Estab. 1890; *p*, Grace M. Hall; *s*, Fred S. Boone.

**Hardinge Oil Burner & Mfg. Co.**
*1770 Berteau Ave., Chicago 13, Ill.*
High pressure gun burners, domestic and industrial; horizontal rotary burners, domestic and industrial; trade name: HARDINGE. Estab. 1908; *p*, Franklin Hardinge, Jr.; *vp*, *t* and *sm*, Henri E. Nelson; *s*, John F. Higgins, *ce*, A. N. Lungren.

**Hart Oil Burner Division, Avery Farm Machinery Co.**
*2006 S. Washington Ave., Peoria 2, Ill.*
High and low pressure gun burners; furnace-burner units w/high and low pressure gun burners; trade name: HART. Estab. 1922; *p*, L. A. Welch; *vp*, M. J. Murray; *ce*, C. T. Walter.

**Harvey-Whipple, Inc.**
*Springfield, Mass.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: MASTER KRAFT. Estab. 1921; *p*, W. O. Harvey; *vp*, F. R. Swayne; *s*, L. F. Connor; *gm* and *t*, Ray G. Whipple; *sm* and *am*, T. A. Hodgdon; *ce*, G. I. Carter.

**Hayward Manufacturing Co., Inc.**
*505 Court St., Brooklyn 31, N. Y.*
High pressure gun and vertical rotary burners; trade name: HAYWARD. Estab. 1925; *p*, Irving M. Hayward; *vp*, Walter F. Hayward; *s*, Alfred G. Taylor; *t*, William H. Hayward.

**Herco Oil Burner Corp.**
*109 W. Chester St., Lancaster, Penna.*
High pressure gun burners, domestic and industrial; trade name: HERCO. Estab. 1927; *p*, A. H. Herr; *vp* and *gm*, H. H. Wilkinson; *s*, *t*, and *sm*, F. A. Wiker.

**Holland Furnace Co.**
*Holland, Mich.*
High pressure gun and forced draft vaporizing burners; furnace-burner units w/high pressure gun and forced draft vaporizing burners; vaporizing water heaters; trade name: HOLLAND. Estab. 1906; *p* and *gm*, P. T. Cheff; *vp* and *s*, A. W. Tahaney; *t*, George B. Tinholt; *sm*, F. H. Ault; *ce*, H. Weyenberg; *am*, H. Boersma.


Easier Reeling, too!

**The features that make "Newtype Cord" so easy to run out, provide the *same* advantages when it comes to getting the hose back on the reel . . . built-in spiral-wire reinforcement that keeps it *round* and free from kinks; lightness of weight; and extreme flexibility. No wonder it rates *highest* with so many drivers!**

**"NEWTYPE CORD" Fuel Oil Hose**

**The patented wire-reinforced construction, incorporating an oil-proof "Synplastic" tube, assures *maximum inside diameter* at all times, on or off the reel. There is always a full, fast flow of oil from truck to nozzle, even when hose is extended around sharp bends; and that tough red cover will put up plenty of fight against abrasive wear.**

"NEWTYPE CORD" Fuel Oil Hose is available in all standard sizes and required lengths. Order now, and begin profiting by its use at the earliest possible date.

***Contact Our Nearest Branch for Details and Prices.***

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THE GOODALL-WHITEHEAD COMPANIES

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Factory—Trenton, N. J.

Established 1870

WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION

**HomEase Products Division, Inc.**
*52 Iowa Ave., Paterson, N. J.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade name: HOMEASE. P, E. P. Shinman; *s*, A. L. Schinman; *sm*, V. F. Lamela.

**Hotentot Co., Inc.**
*2423 Farnam St., Omaha, Neb.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: HOTCO. Estab. 1935; *p*, E. E. Dehart; *s*, Eva Dehart; *t*, J. L. Ward.

**H. A. Howell Oil Burner Co.**
*607—7th St., Dixon, Ill.*
High pressure gun burners, domestic and industrial; gun type water heaters; trade name: HOWELL. Estab. 1939; H. A. Howell, owner.

**Hubbard Co.**
*1014 Marquette Ave., Minneapolis, Minn.*
High pressure gun burners; trade name: HUBBARD. Estab. 1922; *p* and *t*, F. C. Hubbard; *vp* and *s*, W. A. Hubbard.

**H. J. Hueller Mfg. Co., Inc.**
*559 Rogers Ave., Brooklyn 25, N. Y.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade names: TWIN CONTROL, TWIN SCOT. Estab. 1937; *p*, H. J. Hueller; *s* and *t*, A. R. Hueller.

**Hyle Oil Burner Co.**
*Frederick Rd. & Dutton Ave., Catonsville, Md.*
High pressure gun burners, domestic and industrial; vertical rotary burners; trade name: HYLE. Estab. 1907; Howard R. Hyle, owner.

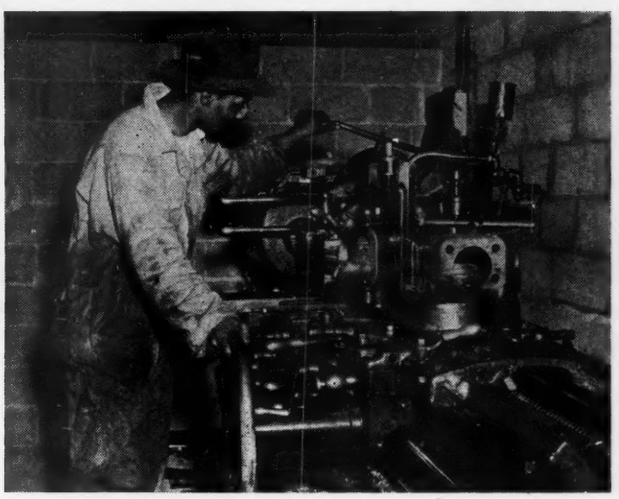
**Independent Oil Burner Corp.**
*139-24 Queens Blvd., Jamaica 2, N. Y.*
High pressure gun burners, domestic and industrial; trade names: SUN-RAY and INDEPENDENT. Estab. 1936; *p*, William Marin; *vp*, Gabe M. Marin; *s*, Julius Klein; *gm*, Alfred Metzger; *ce*, Alfred Luft.

**Instant Heat Oil Burner Corp.**
*8010—17th Ave., Brooklyn 14, N. Y.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: INSTANT HEAT. Estab. 1946; *p* and *gm*, Jack Tarulli; *vp*, *s* and *sm*, Oscar Goodstein; *t* and *am*, Saul Fischbein; *ce*, Frank Kushner.

**Iron Fireman Mfg. Co.**
*4784 S. E. 17 Ave., Portland, Ore., and 3170 E. 106 St., Cleveland, Ohio.*


# SILENT-FLAME OIL Burners

MODEL "M"



MODEL "B"

MODEL "F"

**OFTEN IMITATED**
**BUT**
**NEVER DUPLICATED**

Silent-Flame Oil Burners are the product of over 30 years of oil heating experience. Models from 1 gallon-per-hour to 20 gallons-per-hour.

Standard Equipment.

Precision Built.

MODEL "S"

## SILENT-FLAME MFG. CO., Inc.

**807 ZEREGA AVENUE . . . . . New York 61, N. Y.**

fuel oil & oil heat

High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; horizontal rotary industrial burners; trade name: IRON FIREMAN. Estab. 1936; *p*, T. H. Banfield; *vp* and *sm*, C. T. Burg; *s*, Clifford Snider; *t*, F. S. Hecox; *ce*, E. C. Webb; *am*, Dale Wylie.

**Jackson Oil Burner Co.**
*12305 Turner Ave., Detroit 4, Mich.*
High pressure gun burners; vaporizing burners, forced draft; boiler-burner and furnace-burner units w/high pressure gun, and forced draft vaporizing burners; trade name: JACKSON. Estab. 1946; *p* and *sm*, J. H. Hinckley; *vp* and *s*, T. R. Bohn; *t*, E. P. O'Halloran.

**Jenkins Engineering Co.**
*518 Virginia St., Seattle 1, Wash.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: JENKINS EVENHEAT. Estab. 1920; A. C. Jenkins, owner.

**Freeland L. Jennings Dual Burner Systems**
*P. O. Box 75, Lima, Ohio.*
High pressure gun burners; trade name: JENNINGS. Estab. 1940; Freeland L. Jennings, owner.

**Keith Furnace Co.**
*2601 Dean Ave., Des Moines 17, Iowa*
High pressure gun burners, domestic and industrial; furnace-burner units w/high pressure gun burners; trade name: KEITH. Estab. 1890; *p*, *gm* and *t*, John C. Rehmann; *s*, R. P. Englund.

**Kelly Corp.**
*Arlington, Mass.*
High pressure gun burners; trade name: KELCO.

**King Machine Co.**
*Ridgewood, N. J.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade name: UNIVERSAL. Estab. 1906; *p*, *t* and *gm*, Leonard C. Post; *vp* and *am*, Edgar L. Herz; *s*, Mae Caporaso; *sm*, Neil Geron; *ce*, Milton Scott.

**Kleen-Heet Incorporated**
*1823 Carroll Ave., Chicago 12, Ill.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: KH. Estab. 1931; *p*, Joseph Hearst; *vp*, J. W. Hearst; *s* and *t*, E. J. Reller; *ce*, F. Kupel.

**LaSalle Oil Burner Co., Inc.**
*10230 Fischer Pl., Seattle 55, Wash.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: LA SALLE. Estab. 1927; W. L. Steele, owner.

**Logan Machine Co.**
*33 Division St., Pawtucket, R. I.*
High pressure gun burners; trade name: LOGAN. Estab. 1945; *gm*, C. N. Logan.

**Lynn Products Co., Inc.**
*17 Willow St., Lynn, Mass.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; perforated sleeve type range burners for stoves; conversion range burners; gun type water heaters; trade name: LYNN. Estab. 1927; *p*, R. H. Illingworth; *gm*, E. C. Leach.

**Maith Engineering Co.**
*603 Wood St., Philadelphia, Pa.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; boiler-burner units (steam generator type); trade names: LINCOLN-AIRE, DEAN. Estab. 1918; *p*, Robert A. Maith; *vp* and *sm*, J. J. Schembs; *s*, A. L. Lucas; *gm*, V. Maith; *ce*, G. Brookman.

**Malleable Iron Fittings Co.**
*Branford, Conn.*
High pressure gun burners, domestic and industrial; trade name: BRANFORD. Estab. 1864; *p* and *gm*, T. F. Hammer; *t*, F. V. Bigelow; *mgr* o.b. div. and *am*, H. V. Lang.

**Marine Mfg. Co.**
*1757-63 N. Park Ave., Chicago, Ill.*
High pressure gun burners, domestic and industrial; trade name: MARINE. Estab. 1942; *p*, M. Nolan; *gm*, C. Campbell.

DONGAN
Oil Burner Ignition
TRANSFORMERS
"The Dongan Line Since Nineteen-Nine"
FOR DEPENDABLE SERVICE
Dongan Transformers have long been used on leading makes of oil burners. For long life and dependable service, you can't beat a Dongan! Listed as standard by Underwriters' Laboratories.
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The Dongan Line
Since Nineteen-Nine
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DONGAN
TRANSFORMERS

I'm getting more and more calls for
FURNACE AIR FILTERS
NOTE THE
Self-Seal Edge!*
No. 200 Series
The only filter made that fits any furnace perfectly with no "by-pass" possible.

*Feature*

# RESEARCH AIR FILTERS

***A Natural for Fuel Oil Dealers***

Fuel oil dealers are having their men check air filters when making oil deliveries. Changing to new RESEARCH AIR FILTERS is a simple, 5 minute job—and mighty profitable. Write for details.

## Hard Hitting Merchandising Program

FREE SELLING AIDS are yours for the asking—window and counter display materials, mats, etc. Also free catalog (at left) of air filter sizes for leading makes of furnaces and air conditioners.

***Nationally advertised in Better Homes and Gardens, American Home and Newsweek.***

**RESEARCH PRODUCTS CORP.**

MADISON 3, WISCONSIN

Why not find out NOW about

# RUDY'S

New 1947 Version of its famous cast iron

# OILED FIRED

Air Conditioners? Some Scheduled Production has not yet been allocated. Rudy's have been leaders for 30 years.

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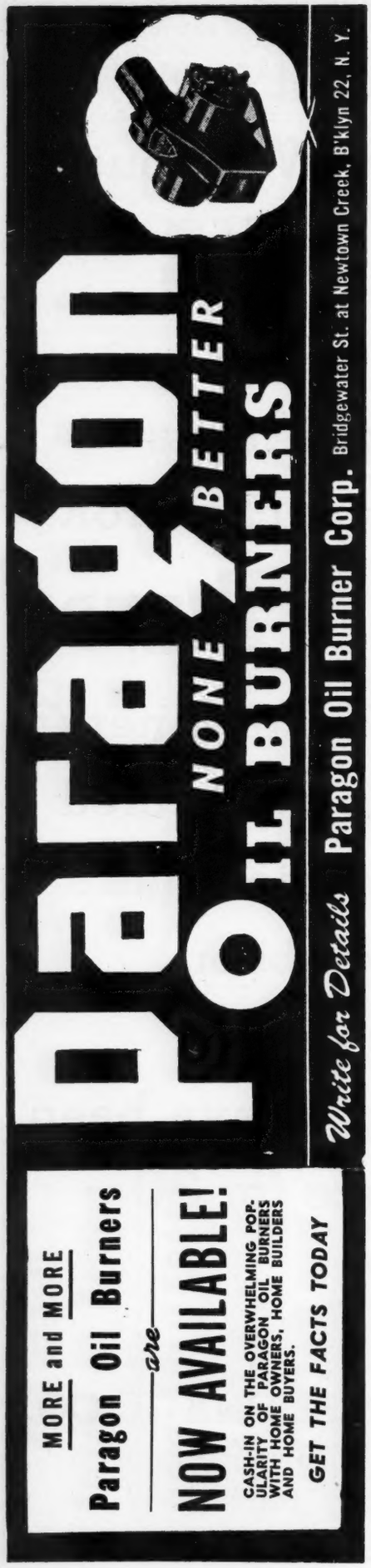
RUDY FURNACE CO.

Dowagiac, Mich.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OIL BURNERS
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Paragon Oil Burners
are
NOW AVAILABLE!
CASH-IN ON THE OVERWHELMING POPULARITY OF PARAGON OIL BURNERS WITH HOME OWNERS, HOME BUILDERS AND HOME BUYERS.
GET THE FACTS TODAY

**Master Automatic Oil Burner Co.**
*Iowa & Division Sts., Kansas City, Kan.*
High pressure gun burners; trade name: MASTER. Estab. 1926; *p*, J. H. Morris; *s*, F. L. Landis, *gm* and *ce*, Jess H. Landis.

**May Oil Burner Division, Gerotor May Corp.**
*Maryland Ave. & Oliver St., Baltimore, Md.*
High pressure gun burners; trade name: QUIET MAY. Estab. 1926; *p*, E. E. Yaggy, Jr.; *vp*, *sm* and *am*, C. R. Collins; *s*, B. Aaronson; *t*, J. Boland; *ce*, G. I. Chinn.

**Mayflower Oil Burner Corp.**
*6014 Hudson Blvd., West New York, N. J.*
High pressure gun burners, domestic and industrial; vertical rotary domestic burners; horizontal rotary burners, domestic and industrial; boiler-burner and furnace-burner units; boiler-burner units (steam generator type); trade name: MAYFLOWER. Estab. 1923; *p* and *ce*, E. J. Wohlfarth; *s*, C. W. Petterson.

**Mechanical Products Mfg. Co.**
*1723 First Ave., So., Seattle 4, Wash.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade names: STAR, ELECTRO. Estab. 1931; C. E. Schinman, owner-manager.

**Messer Co., Inc.**
*629 Central Ave., Newark 7, N. J.*
High pressure gun burners; trade name: MERCO. Estab. 1925; *p*, George H. Messer; *s* and *t*, Henry C. Messer.

**Montag Stove & Furnace Works**
*2011 N. Columbia Blvd., Portland, Ore.*
High pressure gun burners; furnace-units w/high pressure gun burners; trade name: MONTAG. Estab. 1888; R. T. Montag, F. P. Montag, H. A. Montag and J. P. Montag, partners; *gm*, R. T. Montag; *sm*, L. Salzman; *ce*, W. B. Morrison.

**Mt. Hawley Mfg. Co. (Inc.)**
*Mt. Hawley Airport, Peoria, Ill.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade names: EVEREDY, OIL-TRONIC. Estab. 1945; *p* and *gm*, W. A. Hale; *vp*, *sm* and *am*, M. H. Braden.

**Multi Products Eng. Co., Inc.**
*100 Maple St., Bellingham, Wash.*
High pressure gun burners; low pressure atomizing industrial burners; trade name: MPECO. Estab. 1943; *p*, *gm* and *ce*, E. C. Olney; *vp* and *sm*, R. V. Olney; *s* and *t*, Harry H. Schafer.

**Merrill N. Musgrave Co.**
*314—9th Ave., N., Seattle, Wash.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; floor furnace; conversion range burners; trade name: MUSGRAVE. Merrill N. Musgrave, owner.

**National Oil Corp.**
*3rd & Maury Sts., Richmond, Va.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade name: NATIONAL. *Gm*, J. D. Lawrence, Jr.

**Noble Fuel Oil Burner**
*5223 S. Ashland, Chicago, Ill.*
High pressure gun burners; trade name: NOBLE. Estab. 1931; R. G. Noble, owner.

**Northern Controlled Heat Co., Inc.**
*557 Factory Sq., Watertown, N. Y.*
High pressure gun burners; trade name: SILENT CAL. Estab. 1920; *p* and *t*, Frank W. Aikin; *vp*, C. T. Adams; *s*, C. L. Tauroney; *ce*, Richard Bailey.

**Nu-way Corporation**
*Rock Island, Ill.*
High pressure gun burners, domestic and industrial; floor furnaces; gun type water heaters; trade name: NUWAY. Estab. 1921; *p*, William F. Klockau; *s* and *t*, O. K. Gipple.

**Oil Equipment Laboratories, Inc.**
*Bridge St., Elizabeth, N. J.*
High pressure gun burners; boiler-burner units (steam generator type); trade names: ROTO FLAME, SILENT GEM. Estab. 1932; *p* and *t*, John M. Wittke; *vp*, John E. Ayres; *s*, Charles Dorchek; *sm*, John L. Lehman.

**Pacific Automatic Heating Co.**
*1658—20th Ave., Seattle, Wash.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: PACIFIC. Estab. 1924; *owner* and *gm*, C. J. Caley; *s*, Morris Byers; *sm*, Dick Porter; *ce*, Westley Magee.

**Packard Utilities Mfg. Inc.**
*315 Fountain St., New Haven, Conn.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; gun type water heaters; trade name: PACKARD. Estab. 1946; *p* and *gm*, R. H. Parent; *vp*, Jules D. Parent; *s*, Joseph Unfricht; *t* and *ce*, A. J. Unfricht; *sm*, R. H. Parent, Jr.

**Paragon Oil Burner Corp.**
*88-40—77th Ave., Glendale 27, L. I., N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: PARAGON. Estab. 1934; *gm* and *ce*, John J. Morro; *am*, F. Schlosser.

**Park Oil Burner Mfg.**
*225 N. South Carolina Ave., Atlantic City, N. J.*
High pressure gun burners; trade name: PARK. Estab. 1944; David Park, owner.

**Stanley C. Paterson**
*789 Tremont St., Boston, Mass.*

# OHIO "Application Proved" MOTORS

# PREVENT *Product* FAILURES

## *Check These Four Advantages of* OHIO MOTORS

✔ *1* **FREEDOM FROM VIBRATION: All Ohio AC Motors are of the squirrel cage type, which are inherently in balance. Rotor and shaft assemblies are dynamically balanced.**

✔ *2* **FREEDOM FROM HEAT: Better-than-adequate ventilation provides longer life for bearings and windings.**

✔ *3* **FREEDOM FROM DIRT: All internal parts are fully protected against falling chips, dirt and dripping liquids.**

✔ *4* **FREEDOM FROM LUBRICATION WORRIES: Large oil reservoirs, packed with wool yarn, provide generous lubrication. Ball bearings are of the self-sealing type... do not require lubricating for years.**

**THE OHIO ELECTRIC MFG. CO.**

CHESTER BLAND, Pres.

5913 Maurice Ave. • Cleveland 4, Ohio

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**WAYNE HOME EQUIPMENT**

**1. A FULL LINE OF QUALITY EQUIPMENT.**

SOF-LUX SOFTENERS

SHALLOW WELL TURBINE WATER SYSTEMS

DEEP WELL JET WATER SYSTEMS

OIL BURNING BOILERS

CONVERSION OIL BURNERS

GAS & OIL WINTER AIR CONDITIONERS

WHOLESALER-DEALER PARTNERSHIP PLAN

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**NATIONAL MAGAZINE AND FARM ADVERTISING NOW BEING RUN TO 9,000,000 READERS**

## ARE *YOU* READY FOR A BUYERS' MARKET?

Wayne offers the merchandise advantages of a full line based on 25 years of building precision home equipment.

Wayne backs this quality line with the Wholesaler-Dealer Partnership Plan to assure a profitable future for independent wholesalers and dealers.

Wayne supplies a complete sales and advertising program to give full line Wayne dealers all the help needed to insure a retail operation.

Wayne's program assures a sound business future because Wayne Home Equipment is basic, required equipment for both town and country homes.

***BUILD FOR A SOLID FUTURE WITH WAYNE***

. . . . . .

*Write for Details of The Partnership Plan*

SOME FULL LINE DEALERSHIPS ARE OPEN

**THE WAYNE HOME EQUIPMENT CO., INC.**

FORT WAYNE, INDIANA

fuel oil & oil heat

High pressure gun burners; trade name: WALTHAM. Estab. 1928; Stanley C. Patterson, owner.

**Pennsylvania Petroleum Products Co.**
*6 Globe St., Providence 3, R. I.*
High pressure gun burners, domestic and industrial; gun type water heaters; trade name: PIERCE. Estab. 1913; *p* and *t*, Nelson G. Burke; *s*, Mary E. Burke; *ce*, Ralph T. Lewis.

**Persson & Kellison**
*4413 Airport Way, Seattle 8, Wash.*
High pressure gun burners, boiler-burner units w/high pressure gun burners. Estab. 1944; Annabel C. Persson and Morris D. Kellison, partners; *ce*, Edward Larsen.

**Petroleum Heat & Power Co.**
*Stamford, Conn.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; horizontal rotary industrial burners; gun type water heaters; trade name: PETRO. Estab. 1903; *p*, K. G. MacCart; *exec. vp*, J. H. O'Brien; *vp* and *ce*, W. A. Bulger; *t*, J. D. Burnes; *sm*, E. F. Groves.

**Progressive Oil Burner Co.**
*2937—4th Ave., S., Minneapolis, Minn.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; gun type water heaters; trade names: PROGRESSIVE, SILENT CENTRAL, HUSKY. Estab. 1923; *p*, A. H. Coffin; *gm* and *sm*, R. A. Coffin.

**Quiet Automatic Burner Corp.**
*49 Bloomfield Ave., Newark 4, N. J.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: QUIET AUTOMATIC. Estab. 1936; *p* and *ce*, J. G. Kaveny; *s*, Ed Hill; *gm*, E. Reid; *am*, Joseph Cudone.

**Quiet Heet Mfg. Corp.**
*135 N. J. Railroad Ave., Newark 5, N. J.*
High pressure gun burners; trade name: QUIET HEET. Estab. 1936; *p*, S. L. Peters; *vp* and *sm*, R. L. Peters; *s*, Mrs. S. L. Peters; *ce*, M. Chameides.

**Quiet Heet Oil Burner Co., Inc.**
*1555 Coney Island Ave., Brooklyn 30, N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: QUIET HEET. Estab. 1936; *p* and *t*, A. Feld; *vp* and *s*, E. G. Miller; *gm*, J. H. Feld; *sm* and *am*, R. Testaverde; *ce*, Clinton J. Feld.

**Radiant Utilities Corp.**
*1859 Cropsey Ave., Brooklyn, N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner units w/high pressure gun burners; gun type water heaters; trade name: RADIANT. Estab. 1946; *p* and *ce*, Jacob G. Goldberg; *s*, Julius S. Goldberg; *t*, Arthur Marcus; *gm*, A. J. Gregg.

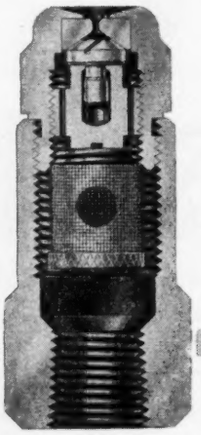
**C. L. Rayfield Co.**
*2010-18 S. Halsted St., Chicago 8, Ill.*
Low pressure gun burners, domestic and industrial; trade name: RAYFIELD. Estab. 1936; *p*, S. E. Koplar; *vp* and *ce*, C. L. Rayfield; *s*, C. L. Guilford; *gm*, *t*, *sm* and *am*, E. A. Freudiger.

**Reif-Rexoil, Inc.**
*37-43 Carroll St., Buffalo 3, N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; horizontal rotary industrial burners; gun type water heaters; trade name: REX-OIL. Estab. 1920; *p*, A. F. Reif; *vp*, *gm* and *t*, C. A. Reif; *s*, A. G. Reif.

**Ret-Rac Corporation**
*3601 Lawrence St., Flushing, N. Y.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade name: UNI-HEAT. Estab. 1945; *p* and *ce*, Harry W. Carter; *vp*, Joseph A. Neumann.

**Richfield Mfg. Co.**
*21 West 19th St., New York 11, N. Y.*
High pressure gun burners, boiler-burner


*Attention!*
**OIL BURNER MANUFACTURERS**



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Make sure of your 1947 supply by ordering nozzles like you order motors, transformers, controls and fuel units.

Place orders with DELAVAN now for this year's anticipated requirements, to be shipped at a specified rate per month, subject to revision if necessary.

*Protect yourself against nozzle shortages and production delays.*

**ORDER NOZZLES *Now!***

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**DELAVAN ENGINEERING CO.**
*Established 1937*
DES MOINES 9, IOWA

# Here's the Ideal Packaged Vaporizing Type Oil Burner for Small Homes

## the 1947 KRES-KNO *Ball Flame*

**Features**

IMPROVED ELECTRIC IGNITION

COMPLETE WITH ALL NECESSARY CONTROLS

NEEDS NO REFRACTORY FIRE BOX

EASY TO CONVERT ANY BOILER, HOT AIR FURNACE WATER HEATER OR STOVE

Here's America's No. 1 small, compact oil burner that revolutionizes heating economy and comfort for small homes, bungalows, gas stations, stores. Simple, easy installation for manual or automatic operation. New perfected electric ignition makes the "Ball Flame" lead the vaporizing burner field. Also made with manual or semi-automatic control.

Made in 2 sizes: maximum—3 qts. and 6 qts. oil/hr.; for warm air furnaces, adapted for max. 85,000 and 200,000 B.t.u. Has Underwriters' approvals. Thousands in use the world over. Selling the "Ball Flame" is your great profit opportunity. Write today.

**KRESNO-STAMM MANUFACTURING CO.**
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518 University Tower Bldg., Montreal 2, Que.

# FUELTONE

## TONES UP FUEL OIL

*Disperses these enemies of good combustion, making entire tank of oil UNIFORM AND USABLE!*

SLUDGE
HEAVY ENDS
MOISTURE
GUMS
ACIDS

- Prevents clogging of lines and strainers. Improves atomization, starting and general boiler operation.
- FUELTONE has treated many millions of gallons of fuel oil. *It has never been known to fail!*
- ECONOMICAL—Merely use 1 pt. to 250 gals. of oil initially. Thereafter—1 pt. to 1,000 gals.

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Distributors & Jobbers—
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**CARBOLITE**
- Soot Remover In Gun Ready to Use

**AQUATONE**
- Boiler Water Rust-Remover

**SEALEAK**
- Stops Boiler Leaks

**AMPION CORP.** 4-88 7th Avenue Long Island City 1, N. Y.

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Forget this bother . . . with FASFILL! It's the quick fill pipe connection . . . just a turn of the wrist and FASFILL is in place. Make it up hand tight only. Build-ups are unnecessary, worn fill pipe threads make no difference. With FASFILL you have any needed connection in a jiffy! Long-wearing gaskets at all bearing points prevent oil seepage. FASFILL eliminates blowbacks and fill drip . . . makes slow fills — fast fills!

## Shove The Gun Home and Let 'er Go!

There's a synthetic rubber diaphragm in the FASFILL head — just shove the gun through this diaphragm and forget about blowbacks. FASFILL is designed to hold the gun in correct position. Save your temper, save time, save money . . . with FASFILL!

**SCULLY SIGNAL COMPANY**
CAMBRIDGE 41, MASS.

Complete set of sizes, makes up to any fill pipe from 2" to 1½" to 1¼" male or female.

**$11.50 F.O.B. CAMBRIDGE**

*Packed in convenient carrying case.*

WHEN ORDERING be sure and give us the OUTSIDE measurement across your gun nozzle.

TO MAKE A QUICK OIL FILL PIPE CONNECTION USE . . .

**FASFILL**

and furnace-burner units w/high pressure gun burners; trade name: RICHFIELD. Estab. 1946; George Bernhard and Terese B. Bernhard, partners; *gm*, George Bernhard; *sm*, John C. Stafford; *ce*, Walter R. Stout; *am*, Jerome Ganz.

**Rossoe Manufacturing Co.**
*413 Fairview Ave., N., Seattle, Wash.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; trade name: ROSSOE. Estab. 1926; *p* and *t*, C. C. Rossoe; *vp* and *gm*, S. G. Crate; *ce*, William Kenn.

**Thomas D. Russo Inc.**
*65 Bradeen St., Boston 31, Mass.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade names: PEER AUTOMATIC, PEEROL. Estab. 1932; *p* and *t*, Thomas D. Russo; *vp* and *gm*, Joseph F. Walsh; *s*, John A. Griffin.

**S-K Co., Inc.**
*Admiral Wilson Blvd., Camden, N. J.*
High pressure gun burners; trade name: S-K. Estab. 1921; *p*, Fred W. Scheifele; *s*, Sam Scriboni.

**Schneidau Oil Burner, Inc.**
*636 Burdette St., New Orleans, La.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: SAF-T-GLO. Estab. 1935; *p*, G. D. Schneidau; *vp* and *ce*, Gayle Schneidau, Jr.; *s*, A. D. de la Houssaye.

**Scott-Newcomb, Inc.**
*1442 S. Boyle, St. Louis, Mo.*
High pressure gun burners, domestic and industrial; domestic low pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; gun type water heaters; trade name: PIONEER. Estab. 1932; *p*, *t*, and *gm*, Lewis L. Scott; *vp* and *sm*, J. T. Scott; *s*, D. M. Scott; *ce*, C. E. Atkinson.

**Selectrol Engineering Co.**
*2036 McDonald Ave., Brooklyn 23, N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner units (steam generator type); trade name: SELECTROL. B. L. Galumbeck, owner.

**Shedlov Oil Burners, Inc.**
*717 Third Ave., S., Minneapolis, Minn.*
High pressure gun burners; trade name: SHEDLOV STREAMLINED. Estab. 1935; *p*, Harry S. Shedlov; *vp*, I. B. Jarvis; *s*, M. L. Shedlov; *sm*, G. O. Lundman.

**Sigwald Engineering Co.**
*2937—4th Ave., S., Minneapolis, Minn.*
High pressure gun burners; furnace-burner units w/high pressure gun burners; gun type water heaters; trade name: SIGWALD. Estab. 1928; *p* and *gm*, A. H. Coffin; *vp*, F. E. Coffin; *s*, J. F. Coffin; *t* and *sm*, R. A. Coffin; *ce*, W. C. Rice; *am*, Lloyd W. Nelson.

**Silent Flame Oil Burner Co.**
*22 Marshall St., Somerville, Mass.*
High pressure gun burners, domestic and industrial; trade name: SILENT FLAME. Carl G. Carlson, owner.

**Silent Glow Oil Burner Corp.**
*1477 Park St., Hartford 6, Conn.*
High pressure gun burners, domestic and industrial; vertical rotary domestic burners; boiler-burner units w/high pressure gun burners; conversion range burners; trade name: SILENT GLOW. Estab. 1923; *p*, Rallston M. Sherman; *vp*, James E. Flynn; *s* and *t*, Henry P. Riordan; *gm*, Bernard C. Lindberg; *sm*, Richard W. Secor; *ce*, John Carlberg.

**Sorensen-Vana Corp.**
*2228 Jones St., Omaha, Neb.*
High pressure gun burners; trade name: SOVACO. Estab. 1945; *p*, *gm* and *ce*, A. N. Sorensen; *vp* and *am*, George Vana; *s* and *t*, Robert Evans; *sm*, Richard Vana.

**Standard Arcoil Corp.**
*21-23 Broad St., Newark, N. J.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burn-


SAFE ★ ECONOMICAL

**KEK** cleans scale, rust, oils and organic matter from the heating surfaces of boilers, steam distribution lines, radiators and air vents. KEK prevents formation of rust and scale. Enables boilers to generate full quota of dry steam. Use for low and high pressure—closed and open systems. Non-caustic. Non-corrosive. Guaranteed harmless. Just blow-off under pressure.

No drain. No flush.
No shutdown.

***DISTRIBUTORS:** Territories open—attractive basis. Kenite chemical specialties also include Boiler Repair Powder (for cast iron), Soot-Removers; Sealing Compounds.*

**KENITE LABORATORY, INC.**
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***For improved handling of gasoline and fuel oil***

**MARLOW SELF-PURGING PETROLEUM PUMPS**

- Centrifugal efficiency combined with positive self-purging action.
- Operate on high suction lifts. *Do not vapor lock.* No parts which require adjustment or manipulation. No auxiliary mechanisms that reduce efficiency and cause maintenance problems.
- ½ to 10-inch sizes. Models for tank truck, terminal, or utility service.

*Send for literature and name of nearest distributor.*

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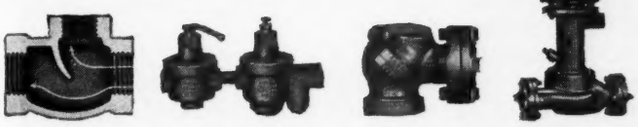

One-Pipe Distributors | Relief and Pressure Reducing Valves | Flow Control Valves | Direct Drive Circulators

**Triplex** ..... is the word for it! Thanks to their advanced design and precision construction, all Triplex Flow Control Units assure the most efficient, dependable operation possible. Hot water is automatically circulated; abundant heat is supplied to radiators instantly—whenever and wherever needed. Heat loss is automatically balanced with heat supply—assuring *controlled* comfort and lower fuel costs. Ample hot water for domestic use is also provided at practically no additional cost. In other words, the Triplex line *means* hot water at its best.

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Triplex Sump Pumps—designed and built for long, trouble-free service—are always in demand. Float ball, movable between two collars on the float rod, permits wide variation in sump depth. Specially tailored motor, with built in float switch, operates centrifugal closed impeller type pump automatically—with minimum power requirements. Available in iron and steel or brass models. Write for catalog and price sheet.

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**HEATING SPECIALTY CO., INC.**
**PERU, INDIANA**

In addition to units illustrated, the Triplex line includes—Direct Drive Horizontal Circulators, Indirect Drive Circulators, Expansion Tanks, Air Eliminators, Water Mixing Valves, Air Vent Valves, Indirect Heaters, Tankless Heaters, Control Units. Electrical Controls, and Barometric Draft Dampers.

SEE YOUR WHOLESALER TODAY

**The CROTTY V-R Heat Generator**

# It's Hot in Action and Sales!

**THE NEW CROTTY V-R is going places fast . . . by the thousands to new low-cost homes. This new Heat Generator has *everything* to make home-heating simple, efficient, economical . . . De Luxe appearance—exclusive design features . . . PLUS year-round hot water without a tank. Backed by nation-wide program to help you sell. Write for descriptive literature and complete details.**

**CHECK THE FEATURES!**

- Welded Steel Construction—A.S.M.E. Code is used as a minimum.
- Conservatively rated by S.B.I. Formula.
- Water Tube Flues combine simplicity of fire tube with efficiency of water tube.
- Adjustable Baffles control proper draft.
- Flues clean from top down.
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- Special Combustion Chamber with each boiler.
- Tankless Coil—Capacity 180 gals. per hour with boiler water at 180°

**WRITE FOR FURTHER DETAILS OF SPECIFICATIONS.**

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**Immediate Delivery—Thru Recognized Distributors**

**CROTTY MANUFACTURING CORP.**
133-15 35th Avenue, Flushing, L. I., New York

ers; gun type water heater; trade name: STANDARD AUTOMATIC-ARCOIL. Estab. 1929; *p, gm* and *ce,* H. D. Steinmark; *vp,* E. G. Steinmark; *s,* Steven W. Sinding; *t* and *am,* Theo. Blau.

**Stutzman Oil Burner Co.**
*27 Albert Ave., Alden, Clifton Heights P. O., Penna.*
High and low pressure gun burners; trade name: STUTZMAN. Estab. 1927; *p,* A. A. Stutzman; *gm* and *ce,* E. A. Stutzman.

**Sundstrand Engineering Co.**
*1325—7th St., Rockford, Ill.*
High pressure gun burners; trade name: SUNDSTRAND. Estab. 1921; *p,* Gust H. Ekstrom; *vp,* W. A. Kemp; *gm, s* and *t,* R. Gustafson.

**Temp-Rite Corp.**
*Burmont Rd. & Jones St., Drexel Hill, Pa.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: TEMP-RITE. Estab. 1945; *p,* John S. Turney; *vp,* Frank P. Harbin; *s,* T. Earle Hutchinson.

**Thrift Heat**
*1258 Park Ave., Woonsocket, R. I.*
Low pressure gun burners; trade name: THRIFT HEAT. Estab. 1931; *p,* Daniel Frankian; *sm,* Edward Frankian.

**Toridheet Division, Cleveland Steel Products Corp.**
*7306 Madison Ave., Cleveland, Ohio.*
High pressure gun burners; domestic and industrial; vertical rotary domestic burners; boiler-burner and furnace-burner units w/high pressure gun and vertical rotary burners; vertical rotary water heaters; trade name: TORIDHEET. Estab. 1921; *p,* W. J. Smith; *vp,* A. G. Singler; *vp* (Eng.) W. W. Slaght; *gm,* J. L. O'Brien; *am,* L. F. Dienst.

**Tower Mfg. Corp.**
*222 Summer St., Boston, Mass.*
High and low pressure gun burners; vaporizing natural draft burners; circulating space heaters; conversion range burners; vaporizing water heaters; trade names: TOWER, SCIENTIFIC, AMBASSADOR. Estab. 1933; *p* and *gm,* M. Bernstein; *t,* Clarence N. Pinksohn; *sm,* C. N. Pinksohn.

**Tru-Heet Co.**
*542 Miller Ave., Trenton, N. J.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; trade name: TRU-HEET. Estab. 1928; *p* and *ce,* H. Wurfel, Jr.; *s,* D. Wurfel; *gm,* H. Mycoff.

**United States Burner Corp.**
*River Road, Wethersfield, Conn.*
High pressure gun burners; boiler-burner units w/high pressure gun burners; trade name: UNITED STATES. Estab. 1933; *p* and *t,* G. V. Lassen; *s,* G. V. Lassen, Jr.; *vp,* R. M. Morgan.

**Volcano Burner Corp.**
*3612 E. Tremont Ave., New York, N. Y.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; boiler-burner units (steam generator type); trade names: VOLCANO, QUIET FLAME. Estab. 1921; *p* and *gm,* E. Camerin; *s* and *ce,* W. Camerin; *t,* V. Camerin; *sm* and *am,* E. Reinholts.

**Walton Oil Co.**
*1311 N. Gettysburg Ave., Dayton, Ohio.*
High pressure gun burners; trade name: MAGIC HEAT. Estab. 1938; *p* and *gm,* C. C. Walton; *ce,* F. O. Barok; *sm,* L. F. Bird.

**Ward Machine Co., Inc.**
*966 Main St., Brockton, Mass.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; floor furnace; trade name: SYNCRO FLAME. Estab. 1931; *p* and *t,* A. Stone; *vp, s* and *gm,* E. A. Teplow; *sm* and *am,* F. Lippman; *ce,* M. A. MacLean.

**Wayne Home Equipment Co., Inc.**
*801 Glasgow Ave., Fort Wayne 4, Ind.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; gun type and vaporizing water heaters; trade name: WAYNE. Es-


**Make Your Humidifying Jobs Automatic and Trouble-Free!**

National Plumbing Laboratory Approved Against Back-Siphonage.

No. 5900-F WATER-BOY FEED VALVE furnished complete as illustrated.

Complete unit that enables you to convert any hand fed pan into an automatic humidifier. Easily and quickly installed. Thumb screw adjustment permits control of water line. Fully adjustable for varying water pressures. Shipped with all necessary fittings and installation instructions. In every way a first-class, dependable outfit—nothing finer to be had. And priced RIGHT for you to make a liberal profit.

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*WRITE TODAY for engineering data and prices on entire MAID-O'-MIST line which also includes complete automatic humidifiers and heating specialties of highest grade. . . . . .*

**MAID-O'-MIST INC.**
AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS
3221 N. PULASKI RD.
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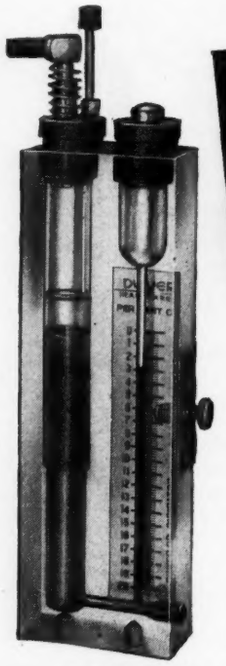

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*Scientific Accuracy* IN ANYONE'S HANDS

DWYER TRANSPARENT
**$CO_2$ INDICATOR**

Dwyer Transparent $CO_2$ Indicator (Model 800) insures *true* readings, even by inexperienced operators, because: (1) trapping of over-pressure is impossible due to Dwyer expansion bladder feature and (2) no pre-absorption error—test sample sealed from active absorbent solution. Its simple design, unbreakable transparent body, durable construction gives longer life, and a higher degree of dependable, scientific accuracy. Also available in Combination Test Set with Draft Gage and Thermometer in handy carrying case.

**F. W. Dwyer Mfg. Co.**
315 South Western Avenue, Chicago 12, Illinois

tab. 1924; *p*, Edward H. Berghoff; *vp* (sales) B. G. Duer; *s*, Leon J. Baker; *gm* and *t*, Norbert G. Berghoff; *ce*, Charles V. Copeland.

**Weatherall Engineers, Inc.**

*3 Friendship St., Providence 3, R. I.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; trade names: WEATHERALL, WEATHERTHERM. Estab. 1928; *p*, P. W. Chadwell; *s*, L. S. Walling; *t*, R. W. Chadwell; *gm*, R. H. Chadwell; *ce*, E. E. Litz.

**Webster Oil Burner Co.**

*Barrington, N. J.*
High pressure gun burners; trade name: WEBSTER. Estab. 1935; *p*, Henry A. Kreh; *s* and *t*, Henry M. Kreh.

**Westchester Home Equipment Co., Inc.**

*432 Austin Pl., New York, N. Y.*
High pressure gun burners, domestic and industrial; trade names: WHECO, THRIFT-T-HEAT. Estab. 1926; *p*, *gm*, *s*, *t*, *sm*, Herbert Mesinger; *ce*, R. Gubinelli.

**Wiborg Mfg. Co.**

*4922 N. Pearl St., Tacoma 7, Wash.*
High pressure gun burners; domestic forced draft vaporizing burners; trade name: WIBORG. Estab. 1946; *p* and *gm*, James H. Wiborg; *vp*, Hazel H. Wiborg; *s* and *t*, J. R. Wiborg.

**Williams Oil-O-Matic Division, Eureka Williams Corp.**

*Bloomington, Ill.*
Low and high pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/low and high pressure gun burners; conversion range burners; gun type water heaters; trade names: OIL-O-MATIC, HI-PRESSURE. Estab. 1919; *p*, H. W. Burritt; *vp* and *gm*, W. A. Matheson; *s*, George Phister; *t*, T. H. Wagner; *sm*, E. H. Davison; *ce*, O. E. Nesmith; *am*, J. H. Read.

**Wisconsin Oil Burner Co.**

*1134 Regent St., Madison 5, Mis.*
High pressure gun burners, domestic and industrial; boiler-burner and furnace-burner units w/high pressure gun burners; gun type water heaters; trade name: WISCONSIN. Estab. 1927; *p*, Sam C. Olson; *vp*, Jane Davidson; *s* and *t*, John C. Westmont.

**Wizard Oil Burner Co.**

*9 S. Main St., Barre, Vt.*
High pressure gun burners; trade name: WIZARD AUTOMATIC. Estab. 1923; *p*, *t*, *ce*, and *gm*, A. A. Lamorey; *vp*, P. C. Cabrini; *s*, Dan Redside.

**York-Shipley, Inc.**

*York, Penna.*
High pressure gun burners; boiler-burner and furnace-burner units w/high pressure gun burners; boiler-burner units (steam generator type); vaporizing water heaters; horizontal rotary industrial burners; trade name: YORK-HEAT. *P*, S. H. Shipley; *vp* and *t*, L. H. Brenneman; *ce*, C. H. Neiman.

II

In addition to the above, the following firms, listed elsewhere in the catalogue, manufacture gun type domestic burners:

*Vertical Rotary:* Caloroil, Timken.

*Vaporizing:* Kresno-Stamm.

*Boiler - Burner:* Aldrich, American Radiator, Crane, General Electric, General Utilities, King Prods., Mar-Coil, Metro, National Home, Penn.

*Furnace - Burner:* Airtemp, Conco, Gar Wood, Green Colonial, Heil, Mueller, Norge, Northwest Fdry. & Furnace, Sunland, Viking, Westwick.

*Industrial:* Best, Eastern Oil, Enterprise Engine & Fdry., S. T. Johnson, National Airoil, Orco, Preferred, Ray, Simplex.

*Space Heaters:* American Htg. & Eng.

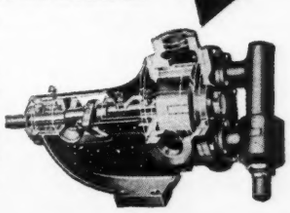
*Cooking Equipment:* Calesco, Safety Products.

*Water Heaters:* S. B. Smith.


"We Have Used All Makes... FIND VIKINGS the BEST"

In a recent nation-wide survey, users were asked to comment on rotary pumps in use. Many fine compliments concerning the simplicity, ruggedness and dependability of Viking Rotary Pumps were received.

"Vikings extremely satisfactory on heavy work", one user reported. "Of all the pumps we have (and there are a great many) we like Vikings best" another said. "Viking is the best pump for our service. Buy nothing else", still another said. "Vikings do a wonderful job. Don't know what we would do without them", another said.



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VIKING PUMP COMPANY
CEDAR FALLS, IOWA

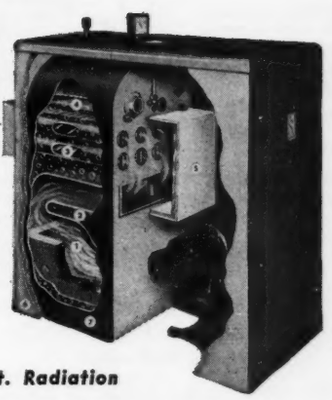
THE NEW YORKER

HERE'S the STEEL BOILER for LONG LIFE AND QUIET OPERATION

ALL STEEL, RESIDENCE
OIL BURNING BOILER

The success of the NEW YORKER has developed a trend in residence boiler design. But only the NEW YORKER has the features that brought about that success.

Immediate shipment now for replacement. Anticipate your future needs by ordering now to assure your share of NEW YORKERS for the coming heating season.



*400 to 1100 Sq. Ft. Radiation*

BUILT TO EXCEL IN DEPENDABILITY, LONG LIFE, AND LOW OPERATING COST

TITUSVILLE SALES COMPANY INC.

50 WEST 50th ST., NEW YORK
Circle 6-2861

## *Joe Keyhole*

(*Continued from page* 83)

and effective background for a booth: Century Engineering from Cedar Rapids. Very effective use of orange silk strips, and an air stream to imitate a huge firebox. "A Great Name In Oil Heating for Almost a Quarter of a Century." So said Jack and Bill Lattner, McWilliams, Rowe, Nessler, Dunn, and the other Century boys . . . Emerson Electric's Bill Frazer stopped in for a while from St. Louis.

"Mills Boiler Efficiency" was stressed at the H. B. Smith Co., display, where Stan Smith, John Reed and Albee also showed a cut-away of the No. 440 . . . and I'd like to offer a special salute to the Dole Valve display men—Stu Phillips, Francis Lund, and Tom Colter (Hollywood's successor to Ronald Coleman). They just beat the hell out of the Dole Vari-Vent story all week long . . . King Gauge's DeMusis, and Al Webber, the big supply man, both from New Haven, were walking with FO&OH canes before the week ended. Couldn't take it, eh?

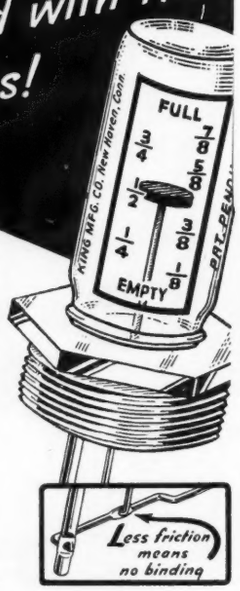
American Radiator had the largest booth devoted to equipment, featured among other things, the New Arcolener Wet Base Oil Boiler. Reid, Jr., Couch, Spindler, L'Hote, and other AmRad boys practically had to nail their oilburners down, for protection . . . and "Draft Korecktors" Harry Sewell, Bill Laudert, Ivar Loring and Burt, had an uproarious week selling Cole Draft Governors . . . among the most dignified exhibits was Taco Heaters, featuring the new Taco-Matic Valve. John White, Joe Murphy, Joe Balter, Schoerner, Blanding and other Tacos handled the situation . . . that was Lenhart and Doyle, the Dynatherm boys from Bethlehem Foundry & Machine, who were wandering about feeling no pain, and I mean not a bit!

This time Clark Hastings and Johnnie Kershaw, the Rochester Gauge boys acted with dignity, restraint, and aplomb, as always. No bottle caps—just Dual Dial Gauges, with an occasional chocolate soda between hours and hours of hard work. (Send me a new thermometer or I'll tell the truth.—signed, Joe Keyhole.)

We watched that Luxaire-Moncreif booth with amazement. Between Olsen, Hayes and Crombie, they must know every jobber and distributor, and dealer, in the country. With such a line, this is a fine combination, and all they need right now is a few hundred thousand more Series O and P units to keep everybody happy . . . Hoffman Specialty, showing all sorts of products for steam and hot water systems, had the advantage of men like Skinner, Gaylord, Murphy, Dillon, and other Hoosiers. Met Leo Sherman, who makes Vincox boiler treatment, and loves it so he uses it instead of salt on his table . . . you think you have troubles? Just move your plant, in the season, to Wayne, Mich., and cope with all difficulties. Still, Gar Wood's booth showed no signs of stress, and the Tempered-Air Exhibits got much attention. Hughes, Kagay and Keaton were there.

Over at the Ace Engineering booth, Schurman and Jack Cowan carried on . . . and at the Field Draft Control exhibit, Scotty Field wagged his tail as usual, with Field, Jr., Potter, Friestad and Glass trying to keep up with the orders . . . there was one booth where the atmosphere was always cheerful—Burnham Boiler. It featured Yellow Jacket boilers, Base-Ray, and Messrs. Weiss, Good, Brophy and Meikle, whose Irvington, N. Y., courtesy made


GUARANTEED
K-G Leak-Proof
TANK GAUGE
Installed with the fingertips!




**K-G Tank Gauges save installation time. No bolts, screws, collars or tools are needed to secure or remove the indicator cap. They can be installed in full or empty tanks.**

***Extra Features***

**Trouble-free service. Has less moving parts to get out of order.**

**Perfect visibility from any angle.**

**Guaranteed leak proof even under pressure.**

**Furnished with either 1½" or 2" thread at no extra cost.**

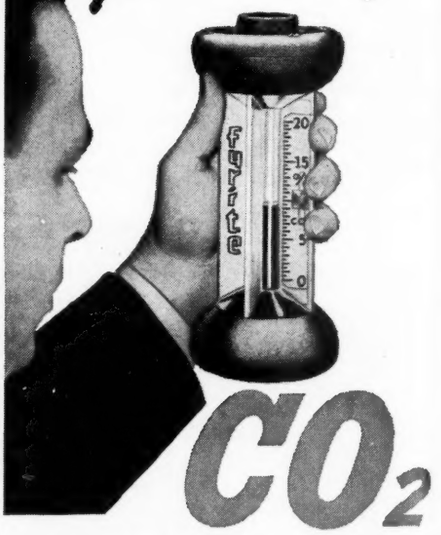
**VENT CAPS**
**Immediately Available**
**Cast aluminum 1" and 1¼" slip-on vent caps**

*Write Dept.* **51** *for Prices, Discounts*

King Gauge & Mfg. Co.
114 WALLACE ST · NEW HAVEN 11, CONN.



Right before your eyes!



$CO_2$
Combustion Check-up

The FYRITE $CO_2$ Indicator above, with the DRAFT-RITE Draft Gauge below and our 100° to 950° F. Thermometer, make a handy, economical combustion testing set that has everything you need for oil burner service and installation tests.

Such tests are not only powerful selling aids for the alert heating man—they are now required by nationally-accepted codes such as FHA Minimum Construction Requirements, O. H. I. Installation Standards, and Massachusetts Oil Burner Ordinance.

Your jobber can probably show you these instruments. If he cannot, send us his name and ask for Leaflet 707 which gives complete particulars.

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**INDUSTRIAL INSTRUMENT CO.**
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OIL HEATING INDUSTRY CONVENTION
HOTEL TRAYMORE, ATLANTIC CITY
MARCH 24-25-26, 1947

## AN OPEN LETTER TO THE INDUSTRY

One of the truly great values of a convention, any convention, is the insight into his own problems which the member of industry gains, -- and can gain in no other way.

Where are we? That's the question we should now be asking ourselves. Where are we with respect to getting back to hard hitting, earnest selling? Where are we in the race with other industries? Where are we in the Battle of the Fuels?

The answers to these and many, many other pertinent and important questions will make this a real convention.

And no member of the oil burning industry can afford to miss any part of it!

Please consider this an urgent personal invitation to be at Atlantic City for the Oil-Heat Institute Convention March 24th, 25th and 26th.

See you there. I'll be looking for you.

W. A. Matheson

President

# TWENTY-FOURTH ANNUAL CONVENTION

## HOTEL TRAYMORE · ATLANTIC CITY, N. J.

## March 24-25-26, 1947

fuel oil & oil heat

every visitor think the exhibit had been built just for him, alone.

Dick Tracy, in the cartoons, keeps me worried all the time. Think he'll get "Influence" in the end? His creator, Chet Gould, has a McDonnell & Miller cut-off on his boiler, and included it on a boiler he drew recently in his strip. E. N. McDonald, and what seemed like a million other people saw it, and the resultant exchange of letters gave McD. & M. a swell exhibit at the Show, along with "Sam," George LaRoi and Jack McDonnell helped with the crowds . . . I wish to report that Preferred Utilities have definitely not gone into the hat business, but are building more and better oilheating equipment in their new building in Danbury, Conn. "Hot-Shot" Shields is in charge. Dick Bohn's stories continued on a high plane in their booth. Jack Kaplan, Sherman, Breed and Schneider aided and abetted.

"Spray" Carroll, we call him—meaning the Monarch Mfg. Co., man from Phila., who was there to talk about Monarch Nozzles—now in huge production, he says . . . and close by was the Aldrich booth, where Lloyd just flitted in and out, and Mrs. Aldrich, Fox, Staley and others did the work. That man Aldrich does more thinking while asleep than most of us do awake—and way out there in the cornfields of Wyoming, Ill., too . . . Carey, Krueger, and McCraig did some high voltage work around the Dielectric Products booth from Jersey City.

Out from Lancaster, Penna., were Wilkinson and Wiker with the Herco line of burners. That Model 35 takes Joe Keyhole's eye . . . and enjoying his first Show was Crotty, the Water Wall man, who brought from his new plant at Flushing, N. Y., his new Home Heat Generator. Much interest indicated there by people who blocked the aisle.

That oil-fired Hoffman Water Heater, shown by Clayton & Lambert's Eddie Paul, from Louisville and Middletown, was a very neat job. We liked it . . . and Mueller Furnaces also enjoyed a big play on the "Climatrol" line. Harold Mueller, Blanchard, Brehm, Rosebourgh, Hill, Mausy, Ress, Nunlist and a few other Mueller boys did all right for the home team.

Homer and Paul Addams, Gus Olson and other Fitzgibbon Boiler boys were lucky to be so tall. There was a mob in their booth most of the time . . . and a sure-fire bet to win a high popularity vote would have been Cleveland Steel Products, showing the new Model J Gun burner, and the new Model F, rubber mounted rotary. Young W. J. Smith, Jr., and his old man, with Lappin, Donelly, Dienst, Clough and some more "Torridheeters" handled the exhibit.

The most beautiful blow-ups of factory pictures were in the National Radiator booth, from Johnstown, Penna. Hunter, Holmes, Hall, Hutchins and Schlentner talked about boilers. Look, fellers, would a highly polished apple get Joey Keyhole anywhere in your school?

Triplex Specialties from Peru were represented by Petty, Peters and Wise—on their feet right to the end . . . and Krueger-Sentry Gauges, from Green Bay, Wis., had Krueger, Wilhelm and Ohlsson to tell everybody about the new Draft Regulator. They had a very cute tank gauge demonstrator tank . . . Viking Mfg. Co., in their large booth, demonstrated "Year-Around Sales for Year-Around


NOW
NATIONWIDE SALES AND SERVICE
FOR BALLOFFET NOZZLES
MADE BY
DELAVAN ENGINEERING CO.
DES MOINES, IOWA
(under exclusive license from Balloffet)

To facilitate increased sales and service, BALLOFFET has expanded its facilities and arranged for DELAVAN ENGINEERING CO. to manufacture and sell BALLOFFET NOZZLES throughout the UNITED STATES.

You can be assured of dependable, efficient cooperation and the same high standard quality product by now ordering your BALLOFFET NOZZLES from DELAVAN. Literature upon request.

Precision Drillers since 1870

BALLOFFET DIES AND NOZZLE CO., INC.
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NOW! IN STOCK
at regular dealer discount
MINNEAPOLIS-HONEYWELL
T11A ACRATHERMS
P404 PRESSURETROLS
V446A GAS VALVES
R19A RELAYS
Q91A & Q92A GUARDS
C56A PYROSTATS
L147A SUMMER-WINTER CONTROLS
C403A & 503A STACKSWITCH
T415B TEMPERATURE CONTROLLER
R416A LOCKSWITCH (DC)
L428B & 628A AQUASTATS
L444A & L409A AQUASTATS
C402A & C602A LOW WATER CUTOFFS
MERCURY TUBES and PARTS
Quantities Limited
ATLANTIC BURNER SUPPLY CO. Inc.
"Everything for the Trade"
100-05 Atlantic Avenue
Richmond Hill 18, N. Y.
Virginia 7-2702

Profits" very convincingly, with the Vikimatic line, also. Herschel Frasher, Paul Patton, Les Gary, Pratt and Baker were the Vikings I saw sailing around . . . Mercoid had more controls in one booth than I ever saw before, with a hardworking crew including Courteol, Fisher, Johnson, Ufer, Stauffer, Lischett, McCauley, et al.

"XLab's Man Who Knows All The Answers" about boiler water was there—Parke Holton, that is . . . Homwer and Ward Brundage, of Kalamazoo, showed their "Better Designed, ditto Built, and ditto Engineered" fans to an admiring throng . . . that man with a silk hat product and felt hat prices was Earl Staffer, from Lancaster, with Earlwine and the rest of his faithful Penn B. & B. crew.

White Rodgers Electric Co., of St. Louis had a variety of colored backgrounds for their controls—rivaling any rainbow we ever saw. Seekers for the pot of gold in W-H sales included Blough, Searles, Robinson Keane, Rodgers, Garner, Speth and Allen . . . a man on the verge of a great announcement was Calvert, of the Viking Pump Co., of Cedar Falls, Iowa. Any day, now, he'll give the industry a jolt.

"Uniform Heating" was the theme of the Heil Co., exhibit. George Hochstein headed the thing, with a host of followers including Stoller, Bill Hatch, Mould, King, Zwanzig, Hofmann, Heise and DesJardine. This crowd flew a unit 20,000 feet high over the mountains to Alaska. A delivery altitude record!

Among the most clever exhibits was Maid-O-Mist, with the Wooleys and Jack Carr showing the advantages of "Minimum Air Restriction." There is a hardworking crew . . . and for a scientific approach, the Viking Air Conditioning boys, from Cleveland, showed "Quietness Visualized" with an Oscillograph from their lab. You could actually "see sound." Levey, Gibbons, Mackenzie, and some smart helpers handled this booth.

That's all we've got space for this time, friends. To those we saw and have no room to mention, apologies. To those we did mention, apologies. To myself and associates, apologies. To the rich and remarkable oilheating industry: "On to Chicago. I'll see you in April, 1948."

—Joe Keyhole.

◈

*Fitzgibbons Boiler Co.*, New York 17, N. Y., fully describes "D" type steel heating boilers in bulletin FO. Included is a full description of how to select a boiler for specific requirements in accordance with the approved Rating Code of the Steel Boiler Institute. Complete engineering tables, diagrams and data are included, as well as descriptions of structural and performance features of the boilers. "D" type boilers are rated for mechanical firing from 2680 to 42,500 sq. ft. steam.

*Multi-Speed* blower control is the subject of a mailing piece prepared by National Thermal Drive Co., Inc. Operation of the control, which varies the speed of the blower in a warm air furnace according to the temperature of the furnace bonnet, is explained, with a cut-a-way view of a furnace showing the control installed.

*Acme Heat & Power Inc.*, Brooklyn 6, N. Y., makes its power burners for domestic application the subject of a 4-page folder. Features are explained and a comprehensive set of tables pictures each of four models, lists the specifications and gives capacity ratings for warm air, hot water and steam installations.


SEE FOR YOURSELF

FEDERAL'S BETTER CONSTRUCTION

FEATURES

1. Large Furnace Volume
2. Steel Plate Furnace Floor
3. Observation Port
4. Rock Wool Insulation
5. Spinner Blades
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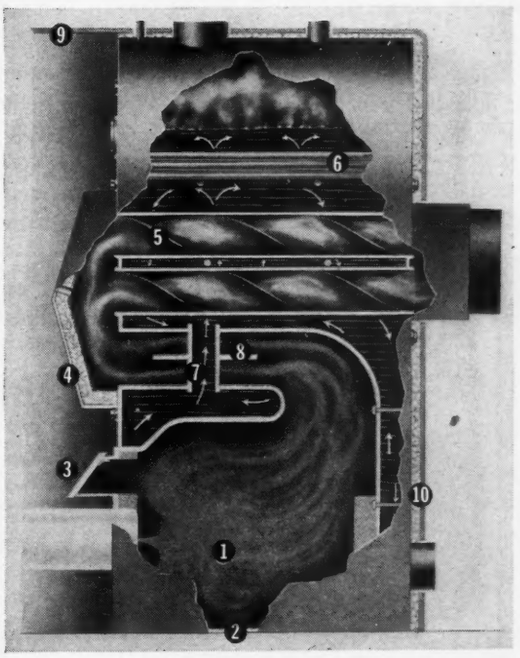
7. Vertical Percolator Tube
8. Extended Heating Surface
9. Streamlined Jacket
10. Air Cell Insulation




FEDERAL BOILER CO., INC.

MIDLAND PARK, N. J.

FEDERAL BOILER CO., INC. F02
Granite & West Streets, Midland Park, N. J.
Gentlemen:
Please send me Price Sheets and Bulletin No. 121.
Name .....
Address .....

### *Burners Dominate Show*

(*Continued from page 78*)

the heating and ventilating show provided the "first showing of America's most complete line of oil-fired equipment," and according to visitors the booth lived up to the promise. Emphasis was on starting with quality and staying with quality. The display included a complete range of sizes of pressure burners and of horizontal rotary cup burners for heavy oils, winter air conditioners, boiler-burner units, oil-fired water heaters, and Steam-Pak generators.

Smallest to largest pressure burners, backed by a 20-year record of integrity and service, were the topic of conversation at the booth of Century Engineering Corp. Along with the burners, the Century furnace-burner unit was featured.

One of the busiest booths at the show, presided over by inventor and designer Calvin D. MacCracken, was the one in which the Jet-Heet warm air furnace unit was displayed. Reasons for the great interest in the unit included its many departures from usual principles for oil-furnace design, its unique combustion chamber and oil-firing details, and the considerable publicity given the Jet-Heet recently in *Life* magazine. The design provides for bonnet temperatures as high as 335° F., the hot air from the furnace being mixed with cooler air from the rooms before it is discharged from mixing type registers.

Crotty Manufacturing Corp. had a display booth of interest to dealers in domestic heating equipment and experts in industrial oil-firing. The brand-new Crotty Heat Generator is said to be an unusually efficient domestic oil boiler; the claim is that its exceptionally effective flues produce startlingly low stack temperatures. The Crotty Forced-Circulation Water Wall Furnace is mainly of interest to dealers who are experts in the field of industrial oilburners. It takes the place of troublesome Dutch ovens in certain instances, for it is added to the front of a large boiler and increases the length of the combustion chamber where an increase in length is needed. Cylindrical, it is cooled by many water tubes, through which the water is force-circulated by a centrifugal pump. The equipment is intended to eliminate combustion difficulties, increase greatly the capacity of already-installed commercial and industrial boilers, and produce great savings in fueloil. Each Crotty Water Wall Furnace must be built specially for the particular boiler to which it will be connected.

Manufacturers of the heating specialties which are used by oilheating equipment dealers presented unusually interesting products at the show. In addition to its regular lines of circulators, water heaters, and fittings for forced-circulation hot water plants, Taco Heaters, Inc. showed its brand-new Taco-Matic Valve. Added to the usual forced-circulation hot water heating plant, this thermostatic valve serves to provide low-temperature, steady radiator heat during mildly cold weather. Whereas without the valve the radiators are quickly flooded with hot water from the boiler when the circulator starts, when the valve is used the radiator temperature increases slowly after the circulator starts. Yet because special piping is used, the circulator provides rapid circulation for the entire system of radiation. Only on coldest days when this is needed does extremely hot boiler water reach the radiators. The objectionable pipe noises which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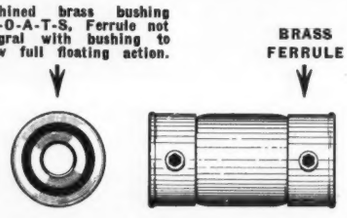
**of RUBBER FLEXIBLE COUPLINGS**

**WHICH**

**CORRECT EXTREME MISALIGNMENT AT LOW COST**




FLEXIBLE NEOPRENE body reinforced with NYLON. One piece. No loosely connected parts. Dampens noise and vibration. Cushions starting torque. Insulated between shafts.

Immediate Delivery of any length ranging from 1½" to 10" with bores of 5/16", ⅜", 7/16", ½", ⅝". NO DIE CASTINGS.

**FLEXIBLE COUPLING MFG. CO.**
6220 So. Ellis Ave., Chicago 37, Ill.
*Phone Dorchester 2350*

**GORTON SYSTEM**

**of**
**Equalizing and Vaporizing**
**Existing Steam Heating Systems**
***for***
**Automatic Heating**

Guaranteed to heat all radiators evenly and quickly on 4 to 8 ounces vapor pressure—no piping changes required.

***Prompt Shipments***

***Write for new Bulletin No. 114***

**GORTON HEATING CORP.**
*Since 1887—Mfrs. Heating Equipment*
CRANFORD NEW JERSEY

have caused complaints on certain forced-hot-water installations are ended through installation of the device, it is claimed. Heating is said to be much steadier. Special piping and special wiring of the oil burner, circulator, and controls are used along with the valve.

Along with showing his well-known fuel units and ignition transformers, Doc Ford of the Webster Electric Company took great pride in continuing, at the show, to educate oilheating enthusiasts in the benefits of applying his Thermodrive unit to forced-circulation warm air heating plants. A relatively inexpensive and easily-installed device, the Thermodrive can be applied to old furnace installations as well as new winter air conditioners. It simply causes the circulating blower to run more slowly when the bonnet temperature is low than when it is high. The results are said to include fuel savings, more even heating, and easier starting of the motor which drives the circulating blower.

Burnham Boiler Corp. featured, in addition to the Yellow Jacket Boiler and the DeLuxe Oil Burning Boiler with the vertical flues, its two models of radiant baseboards, the Standard and the Hy-Power Base-Ray units. Data are available on how one-pipe steam plants may be adapted for installing these.

A product of special interest to oil-heating equipment dealers who specialize in providing the finest possible heat for large buildings was shown by Barnes and Jones, Inc. It consists of orifices for the radiator feed valves of two-pipe steam plants; a special feature lies in construction to eliminate any possibility of objectionable noises of steam flow being encountered after the orifices are installed. Highly developed special adjustable radiator feed valves were also displayed by Barnes and Jones.

Bell & Gossett's new product, the "Clean-A-Coil" valve, proved of great interest to burner dealers who have been troubled by the plugging of indirect water heater coils on tank-equipped installations. Based on an entirely new idea, the "Clean-A-Coil" valve causes the indirect heater coil to be flushed out forcibly when a hot water faucet is opened. The B & G booths also featured educational displays on radiant and floor heating. The complete B & G line of circulators, indirect water heaters, motorized valves, pumps, and specialties for forced-circulation hot water heating systems was displayed.

Dole adjustable vent-valves and quick vents for one-pipe steam heating plants were well exhibited by booth-specialists who explained that oil-firing of one-pipe steam plants calls for adjustable venting. Another item discussed for the benefit of oilheating men was the tempering valve Dole offers for the hot water tanks of summer-winter layouts. Said to be extremely practical and reasonably-priced, the Dole tempering valve is meant to eliminate complaints about hot water from faucets running dangerously or inconveniently hot on days when considerable heat for the house is needed. Special installation instructions are given for the valve; installing it as low as possible reduces greatly the lime deposits in the valve in hard-water areas.

The Perfex exhibit of controls included, in addition to an unchanged line of domestic oil burner controls, a new line which includes seven industrial controls


A Budding Market FINDS TEESDALE OIL PUMPS

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AND HERE'S HOW . . .

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SILENT and SELF-PRIMING
LEAKPROOF, VAPOR and OIL TIGHT
ALL PARTS INTERCHANGEABLE

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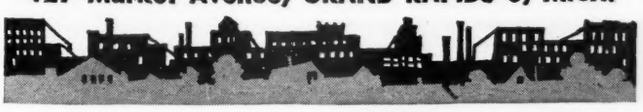
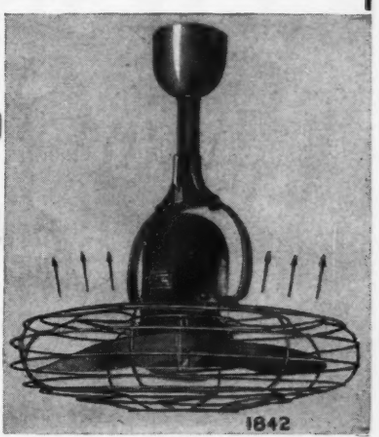
Pioneer Designers and Builders of Precision Fuel Oil Pumps
427 Market Avenue, GRAND RAPIDS 3, MICH.



PREVENTS WALL STREAKING AND AIR STRATIFICATION

Reco RADI-AIRE HEAT CIRCULATOR FAN




Hundreds of fuel oil heating men have pleased their customers by solving the problem of hard-to-heat rooms and added to their profits by installing a RECO Fan.

This revolutionary fan operates differently than any other as it blows upwards, breaking up the trapped air at the ceiling and intermixing it with all of the air in the room, providing uniform temperature at the floor and at body level It pays for itself quickly by substantial savings in fuel costs.

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for average-size steam generating plants. Particularly important to equipment dealers who are combustion experts and who aim to improve the boiler rooms of medium-size factories, institutions, launderies, schools, hospitals, hotels, etc., the industrial controls include damper operating motors, draft controls, and pressure controls applicable to coal-fired, gas-fired, and oil-fired installations.

Walton Laboratories, Inc. had on display several models of motor-driven humidifiers. Table-top models for residences are available for an output of one pint of water per hour, retail price $37.50. Larger models also are available, including some which can be connected to water supply lines so that re-filling is unnecessary, and which can be started and stopped automatically by an automatic electric control which is adjusted for the desired relative humidity.

The Hoffman Specialty Company had news of several new products, on display for the first time at the show. For one thing, there is a new automatic vent valve for hot water heating plants. Carefully-made with a hand-lapped valve which is well-guided, this is said to be suitable for pressures up to 75 lbs. The well-known Hoffman Specialty hot water heating plant was on display, with the controls that give radiator temperatures to match outdoor temperatures. Also featured was the Hoffman oil-fired high-boy winter air-conditioner type furnace, suitable for utility room installations, suitable for 1.3 gph maximum firing rate. A companion to this is a similar unit for homes which have basements.

Space limitations do not permit making comments on several displays at the heating and ventilating show which should be covered in detail. To spend ten minutes' minimum time in each booth and more time where needed to appreciate the displays fully, is impossible in the time the show was open. It would have taken several hours, for example, to try to obtain the full benefits of the several and educational control booths, and it is futile to try here in a few words to give a proper idea of the value of many of the exhibits. There's an education to be had at shows like the one which was staged at Cleveland in January; unfortunately there is no substitute for going to such a show and using as much time as possible to study each exhibit.

◈

*Copper & Brass Research Assn.*, New York 17, N. Y., has published "Radiant Heating," a booklet covering the use of copper tube in radiant heating systems. Non-technical in nature, the booklet discusses the history and development of radiant heating and enumerates advantages for the system. Examples of successful installations of all types are illustrated and explained. The booklet is designed to give the architect, the engineer, the dealer and the contractor, as well as the consumer, a survey of radiant heating and the role of copper tube in the systems.

*Radiant* pressure oil burners are illustrated and described in a four-page folder prepared by Radiant Utilities Corp., Brooklyn, N. Y. With a space on the back page for dealer imprint, the folder, in addition to enumerating features, gives capacities for four models and lists the specifications.


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The Fuel Oil Conditioner Backed By More Than 100,000,000 Gallons of Fuel Oil Experience
Gives you repeat business—your customers need Parakem to prevent sludge deposits in the storage tank, lines and oil burner. Parakem improves atomization, allows quicker starting — results in a brighter, cleaner flame.
Parakem is specially priced for resale by dealers at good mark-up.
Sold in one and 5 Gallon Cans —15, 30 and 53 Gallon Drums
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BALANCE STEAM HEATING SYSTEMS with
JACOBUS
(SELF-ADJUSTABLE)
Air Valves

"CAN'T BE BEAT FOR EVEN HEAT"
A free-venting air valve with a thermostatic control. Guaranteed to give satisfactory results. Designed and priced for those who insist upon quality. Ask for Jacobus the next time you buy air valves. Sold only through wholesale plumbing and heating supply houses.
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MAJOT AUTOMATIC MACHINE COMPANY, INC.
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Designed to fit 1½" or 2" openings on all 55 gal. storage tanks.

Patented MEL OIL GAUGES are unaffected by atmosphere . . . vacuum sealed against leakage . . . furnished with all metal rotating floats . . . readings furnished in two colors printed on plastic tube . . . made of the finest materials available . . . moderately priced due to specialized quantity production . . . carry a factory guarantee. Available for immediate deliveries.

**ADJUSTABLE**
For quick, accurate dual dial fractions and gallon reading of tank contents from any direction at all times.

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No mechanical movements. Can not get out of order. Guaranteed for life of tank.

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- 400 SERIES for modest homes
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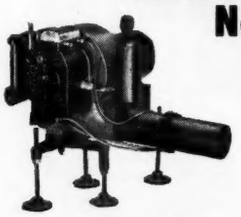

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### *New Veterans' Bill*

(*Continued from page 62*)

ment pile." These are veterans who were not employed before they went to war and thus have no reemployment rights, no seniority in their jobs comparable with men who didn't go to war, and would probably be unemployed in any depression. They are said to have the least desirable jobs now, and deserve better treatment. In addition, sponsors of the bill mention some two million unemployed veterans as of last fall, plus another half million disabled veterans who want to work but have not been hired.

Pointed out as opportunities for veterans, in addition to the obvious possibilities of starting a small business in the home town, are the development of Alaska, expansion of ocean shipping and fisheries, development and irrigation of millions of acres of public lands in the West, modernization work in foreign countries, particularly those where applied democracy might prevent leftward political shifts, acquisition of closed war plants to split up into small units for new enterprises, expansion of foreign markets for American products, and many others. About all that has to be done is to spot a business opportunity, prove that it's reasonably sound, show how it will help veterans by getting appraisals of the project from local veterans' societies and business people, get the loan and start operating.

It is believed by the bill's sponsors that its passage will head off demands for bonuses that would eventually reach 30 billion dollars. Moreover, the plan would, in principle, cost the taxpayers nothing, for every loan would be self-liquidating. It would also bear 4% interest, while the cost to the Government for the money would be about 2½%, leaving 1½% difference to cover all administrative costs.

The whole project is not too different from the original concept of the Reconstruction Finance Corporation back in 1932 when it was supposed to help businesses get out of depression troubles. In practice, however, R.F.C. did relatively little for small businesses, primarily because it was hard for them to prove that they could repay the loans. R.F.C.'s losses on loans were insignificant, because their appraisals were cold and hard, and almost totally devoid of imagination. For example, they could easily lend 60 million dollars to the Pennsylvania Railroad to electrify its New York to Washington line, but it was very hard for them to lend sixty thousand dollars to a small Pennsylvania factory, even though the refusal put 100 men out of work . . . the loan was clearly not gilt-edged and public money was at stake.

It will be interesting to see if a "Veterans RFC" can do better on small projects. The chances are rather strong that the new corporation would take more chances than did RFC, for the several veterans' organizations would be closely watching results, with the ever potential threat of starting a drive for bonus billions as an alternative. Of course, all sorts of people could get started in the oilheating business or the oil business if they would employ principally veterans. Success of the proposed corporation will depend far more upon management, which

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Several Territories Available

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GENERAL TANKLESS WATER HEATER

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# IMMEDIATE DELIVERY

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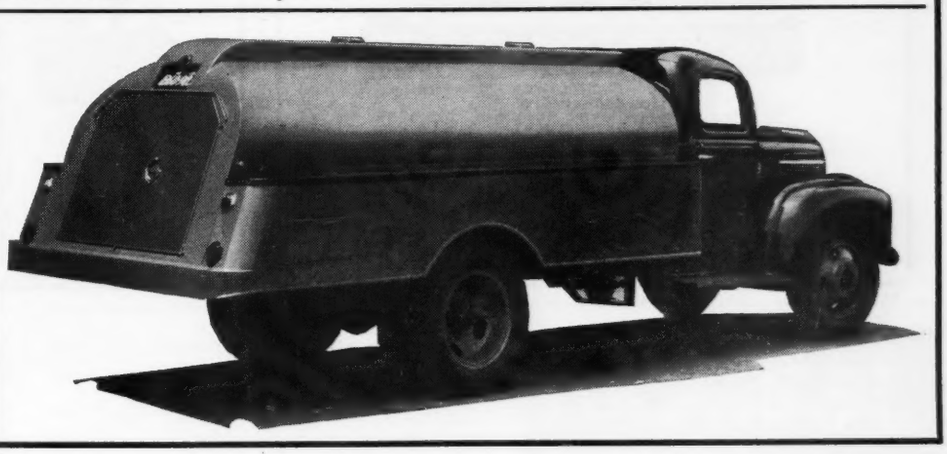
**Standardized in design plus excellent workmanship. The *flash-fueler* series may be mounted on any 1½ ton rated chassis.**

**FEATURING THE NEW REMOTE CONTROL CLUTCH OPERATOR**

**Eliminates jumping in and out of cab or reaching into cab and "slamming" power-takeoff in position.**



**GASECO**
224 Bassett St.
P. O. Box 1499
NEW HAVEN, CONN.


is to be vested in seven directors, than in any section of the statute. If veterans can be materially helped, without too much paternalism and without unreasonable cost to the general economy, the bill is worth passing. Yet it is a surprise to see it coming from the heretofore deep right, the Republican side of the chamber.

There is always a possibility that the President might get political advantage for the Democrats by setting up this corporation under War Powers Act II rather than leaving the initiative to a Republican Congress; then Congress could later act to make it permanent or take the onus of letting it die when the War Powers authority terminates.

◈

*William M. Stratford* has been elected president of Texaco Development Corporation, succeeding R. J. Dearborn, who has retired after 27 years with Texas.

## *Fireboxes for Industrial Burners*

(*Continued from page 65*)

nor can it be subjected to load carrying. Hence it cannot be used as the first layer of a floor; insulating firebrick however, can carry load such as the weight of a floor. Insulating sheets can be used to good advantage behind side walls and bridge walls, and is almost universally used to line the front steel plate of a standard horizontal rotary burner installation.

Insulating concrete is one of a class of recently developed refractory concretes. Ordinary portland cement is made of calcium silicate base, and concrete made from it has no refractory quality. A new cement made from calcium aluminate base can be mixed with suitable aggregates to form refractory, or heat resistant, concrete. The aggregates themselves are grogs made of various refractory materials, such as crushed firebrick, insulating firebrick or expanded vermiculite. The refractory concrete is prepared and poured into forms in the same manner as ordinary concrete. After setting 24 hrs. the refractory concrete has about the same strength as one made from portland cement, but it will withstand temperatures from 2000 deg. to 2750 deg., depending upon the nature of the aggregate used.

The rates at which substances conduct heat are known as coefficients of heat conductivity. It is interesting to compare the conductivities of the various materials used in firebox construction. A few values are listed in the following table.

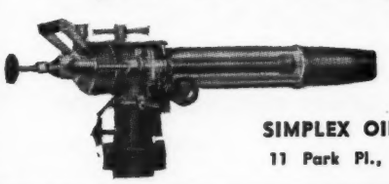
THERMAL CONDUCTIVITIES

In Btu per sq. ft. transverse area per degree F temperature difference per inch thickness per hr.

| | |
|---|---|
| Standard fireclay brick at 2200 deg. | 10.6 |
| Standard fireclay brick at 2000 deg. F | 10.2 |
| Plastic firebrick at 2200 deg. F | 6.7 |
| Plastic firebrick at 2000 deg. F | 6.4 |
| 2800 deg. fireclay insulating firebrick at 2400 deg. F | 4.1 |


Since SIMPLEX OIL HEATING CORPORATION SIMPLEX OIL BURNING SYSTEMS REG. TRADE MARK 1910

**Simplex Oil Burning Systems**



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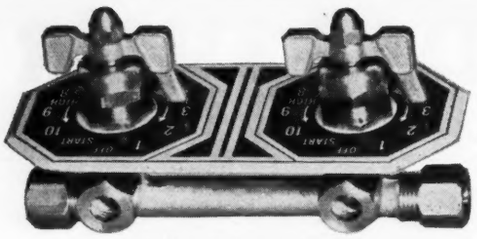
**Automatic Fusible Line Valve**

**A combination shut-off valve and fusible link for oil burner installations. Self-contained automatic type—no chain, pulley, hook or weight required. Held open by fusible device against a spring. Can be manually operated—horizontal or vertical position.**

**Globe type valve made from brass bar stock, metal to metal seat and disc construction. Easily installed—no adjustments required.**

**Made in ⅜", ½", ¾" and 1" sizes.**

**MOORE and KLING Inc.**
**221 High Street** **Boston, Mass.**



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with unvarying accuracy of flow
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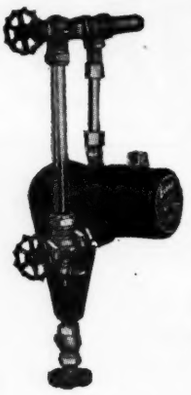

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HUBbard 5990


| | |
|---|---|
| 2600 deg. fireclay insulating firebrick at 2400 deg. F | 3.3 |
| 2300 deg. fireclay insulating firebrick at 2000 deg. F | 2.6 |
| 2000 deg. fireclay insulating firebrick at 1800 deg. F | 2.0 |
| 1600 deg. diatomaceous brick (sol-o-cel) at 1600 deg. F | 1.5 |
| 1600 deg. vermiculite insulating block at 1400 deg. F | 1.0 |
| Common brick at 1000 deg. F | 6.8 |
| Common brick at 400 deg. F | 5.6 |

The foregoing discussion of the various kinds of refractory materials should enable the dealer to select those that will best meet a given set of conditions or requirements. It might also be helpful to review the chief types of failure of refractory, meaning the characteristic manners in which firebrick structures become deformed or otherwise unusable.

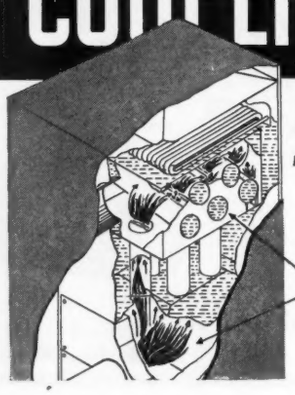
Spalling is a term used to describe the cracking or shattering of firebrick to such an extent that pieces break away and expose fresh surface to furnace conditions. This is the most common type of firebrick failure, and three kinds of spalling have been recognized. Expansion and contraction resulting from alternate heating and cooling cause a spalling designated as thermal. To resist this, firebrick should have a low coefficient of expansion, a uniform rate of expansion and high elasticity. Superduty firebrick are especially resistant to thermal spalling. A second kind of spalling results from abrasion or pressure; this will be encountered in coal-burning fireboxes where firing tools are likely to come in contact with the firewalls. The third class of spalling is caused by internal stress within the brick, as a result of structural alteration of the brick's composition under influence of chemical and physical environment, usually making the brick more brittle.

Fusion implies the melting of a substance. Actually, as applied to a firebrick, the term is not specific. For one thing, fireclays, and therefore firebrick, are not pure substances, but are mixtures of substances, each ingredient of which has its own peculiar fusion temperature. For another, it is not possible to determine the exact fusion point of the mixture, because it begins to soften at a temperature considerably below that at which it becomes liquid. Even the softening point depends upon prevailing conditions, such as load imposed on the brick. As the temperature of a brick rises, the lower melting ingredients become liquid, in the interior of the brick. Should the brick be subjected to load, the pressure will cause deformation, since the liquid acts as a lubricant over which the remaining solid portions of the brick slide. At no load, therefore, a brick will resist deformation by temperature to a much higher point than a brick carrying load.

By slagging is meant chemical reaction of the refractory with other substances. Fireclay materials are chemically basic, that is, on the alkali side of neutrality. Combustion gases are acidic, and so have a chemical affinity for basic substances. High sulphur gases especially will enter readily into chemical reaction with firebrick. The product of such chemical action is called slag, and the erosion of brick in this manner is slagging. Slagging is especially prone to occur in a coal burning firebox, because of the acidic nature of coal ash. In oilburning fireboxes, slagging is not too pronounced unless moisture accumulates in cold fireboxes.

The foregoing discussion has shown the need for proper firebox planning, the basis of its design, and the materials of


**COOPERHEAT**



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TOPS IN EFFICIENCY
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Large Seamless Vertical Fire Tubes and Water Tubes, Embodying a New Scientific Development, Facilitate Swift and Economical Heating.
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Once tried—always used
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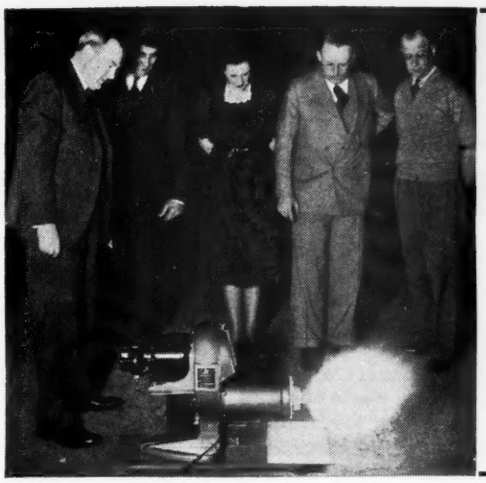

Portable display burning outdoors without aid of firebox—

IGNITION CUT-OFF—NORMAL FLAME RETAINED. ←

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**Beckett COMMODORE—Saves 3 Ways**
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2. " RUNNING
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## DEGREE DAY TABLES

| ONE MONTH ONLY | | | | | SEASON TO DATE | | | |
|---|---|---|---|---|---|---|---|---|
| | December | | Percent | | (Sept. 16 to Dec. 31) | | | Percent |
| Normal | 1945 | 1946 | Change* | | Normal | 1945 | 1946 | Change* |
| 1139 | 1354 | 1134 | — 0.4 | Albany | 2421 | 2726 | 2240 | — 7.5 |
| 640 | 827 | 509 | —20.5 | Atlanta | 1175 | 1316 | 873 | —25.7 |
| 852 | 980 | 699 | —18.0 | Baltimore | 1647 | 1669 | 1223 | —26.0 |
| 1000 | 1133 | 940 | — 6.0 | Boston | 2087 | 2156 | 1752 | —16.1 |
| 1102 | 1277 | 1037 | — 5.9 | Buffalo | 2384 | 2599 | 2032 | —14.8 |
| 1108 | 1331 | 1028 | — 7.2 | Chicago | 2235 | 2643 | 2013 | — 9.9 |
| 953 | 1131 | 767 | —19.5 | Cincinnati | 1892 | 2024 | 1818 | — 3.9 |
| 1040 | 1233 | 959 | — 6.8 | Cleveland | 2174 | 2371 | 1813 | —16.6 |
| 571 | 668 | 397 | —30.5 | Dallas | 944 | 967 | 717 | —23.2 |
| 1012 | 1006 | 790 | —21.9 | Denver | 2272 | 2303 | 2252 | — 0.9 |
| 1200 | 1454 | 1050 | —12.5 | Des Moines | 2424 | 2758 | 2192 | — 9.6 |
| 1120 | 1250 | 1019 | — 9.0 | Detroit | 2369 | 2491 | 1964 | —17.1 |
| 1129 | 1229 | 1025 | — 9.2 | Grand Rapids | 2456 | 2582 | 2015 | —18.0 |
| 1052 | 1270 | 1013 | — 3.7 | Hartford | 2217 | 2457 | 1930 | —13.0 |
| 1245 | 1352 | 1204 | — 3.3 | Helena | 3074 | 3216 | 3458 | +12.5 |
| 331 | 396 | 212 | —36.0 | Houston | 520 | 504 | 354 | —31.9 |
| 1026 | 1205 | 917 | —10.6 | Indianapolis | 2053 | 2349 | 1715 | —16.6 |
| 986 | 1216 | 807 | —18.2 | Kansas City | 1877 | 2097 | 1558 | —17.0 |
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| 934 | 1057 | 832 | —10.9 | New York | 1859 | 1896 | 1442 | —22.4 |
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| 877 | 1090 | 836 | — 4.7 | Philadelphia | 1697 | 2074 | 1508 | —11.1 |
| 979 | 1189 | 897 | — 8.4 | Pittsburgh | 2028 | 2285 | 1700 | —16.2 |
| 1172 | 1328 | 1187 | + 1.3 | Portland, Me. | 2602 | 2918 | 2504 | — 3.8 |
| 729 | 780 | 716 | — 1.8 | Portland, Ore. | 1676 | 1582 | 1930 | +15.2 |
| 1015 | 1216 | 915 | — 9.8 | Providence | 2157 | 2280 | 1806 | —16.3 |
| 917 | 1159 | 777 | —15.3 | St. Louis | 1729 | 2075 | 1483 | —14.2 |
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| 1090 | 1306 | 1021 | — 6.3 | Toledo | 2278 | 2558 | 1996 | —12.4 |
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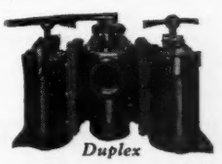
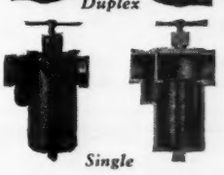

Duplex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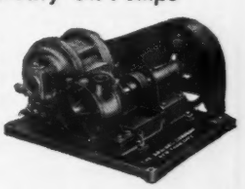

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◈

*Pittsburgh Equitable Meter Div.*, Rockwell Mfg. Co., Pittsburgh, Pa., has issued an 8-page bulletin which shows complete mechanical details of the new Pittsburgh Compact tank truck meters almost entirely in pictures, drawings and cross sections. Diagrams illustrate in isometric projection the recommended tank truck piping details for both gravity and pumping systems, and others trace the flow stream of the Rotocycle meter principle. Bulletin No. OG-200 lists operating specifications, prices and weights of the variations of Models A and B.

*DeSoto Oil Burner Corp.*, York, Pa., has prepared an envelope stuffer on its gun type conversion burner. Attractively done in color, the folder contains two photographic views of the burner, with accompanying text pointing out construction and operating features.

*Burnham Boiler's* complete line of boilers for all types of fuels, hot water supply boilers, radiant baseboards, radiators, unit heaters and accessories are the subject of Catalog No. 80, revised June 1946, as issued by Burnham Boiler Corp., Irvington, N. Y. Numerous illustrations are employed to show the various models and their features. For all, tables are included, listing complete dimensional and performance data.

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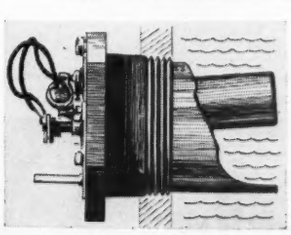

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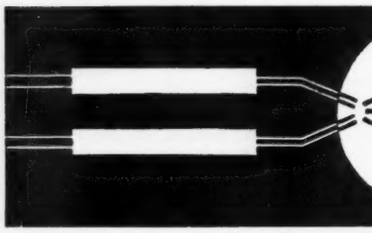

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